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HOOKER'S

ICONES PLANTARUM;

OR,

FIGURES, WITH DESCRIPTIVE CHARACTERS AND REMARKS, OF NEW AND RARE PLANTS,

SELECTED FROM THE

KEW HERBARIUM.

THIRD SERIES.

EDITED BY

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MISSOURI
BOTANICAL
GARDEN

ICONES PLANTARUM.

Plate 1301.

GLOSSOCALYX LONGICUSPIS, *Benth.*

Monimiaceæ, Tribe Atherospermeæ.

G. longicuspis, *Benth. sp. n.*; foliis distincte petiolatis basi æqualiter angustatis, perianthii lobo majore tubo 6–8-plo longiore.

Hab. West tropical Africa; Island of Fernando Po, *Mann, n.* 1428; and Sierra del Crystal, *Mann, n.* 1723.

Arbor 30–40-pedalis, partibus novellis pilis brevissimis conspersis. *Folia* alterna, oblonga, 6–8 poll. longa, 2–2½ poll. lata, acumine longo angusto terminata, dentibus parvis distantibus notata v. integerrima, basi æqualiter angustata, petiolo 3–5 lin. longo fulta, membranacea, pennivenia et tenuiter transverse venulosa. *Pedicelli* e nodulo axillari villosulo per 2–4 fasciculati, filiformes, 4–8 lin. longi. *Perianthium* oblique campanulatum, 1–1½ lin. latum, ore plus minus dilatato valde obliquo et inæqualiter dentato, uno latere in acumen sæpe fere pollicare producto, fauce annulo carnoso subclausa. *Discus* tubo adnatus, in flore ♂ præter annulum faucis parum prominens, in flore ♀ carnosus, intra tubum plus minus inter carpella intrusus, cavum in loculos dividens, ab annulo faucis subdistinctus. *Stamina* floris ♂ perianthio inclusa, intra discum 2–3-seriata, filamentis brevibus latis subconnatis; antheræ ad apicem filamenti sessiles, ovatæ, introrsum 2-locellatæ, valvis sursum dehiscentes. *Carpella* floris ♀ plurima, singula locellis disci plus minus inclusa, in stylum desinentia; styli liberi, e perianthii fauce breviter exserti, ovulum e basi ovarii erectum. *Fructus* immaturus subglobosus, angulatus, carnosus, limbo perianthii emarcido coronatus, maturus ignotus.

This and the species figured in the following plate form a new genus, now first published in our 'Genera Plantarum,' and belonging to an order previously unknown in Africa. The genus is closely allied to the American genus *Siparuna*, and has probably the same fruit, but appears sufficiently distinct in its alternate leaves and very peculiar perianth.—G. Bentham.

Plate 1301, Male plant. Fig. 1. Perianth. 2. The same seen from above, the long point of the limb cut away. 3, 4. Stamens.

Plate 1302.

GLOSSOCALYX BREVIPES, *Benth.*

Monimiaceæ, Tribe Atherospermeæ.

G. brevipes, *Benth.*, *sp. n.* foliis brevissime petiolatis basi oblique subcordatis, perianthii lobo majore tubo duplo v. vix triplo longiore.

Hab. Cameroon river, West tropical Africa, *Mann*, *n.* 722 *and* 2196.

Frutex 10-pedalis. *Specimina* primo aspectu iis *G. longicuspidis* simillima, sed folia omnia integerrima videntur, paullo minora, acumine breviore et basi rotundato-subcordata plus minus inæqualia, petiolo 1 v. vix 2 lin. longo. *Flores* minores, in fasciculo præsertim masculi numerosiores, pedicello vix 2 lin. longo, perianthii dentibus 2–lobis minus inæqualibus, acumine vix 2 lin. excedente.—G. Bentham.

Plate 1302, Female plant. Fig. 1. Perianth. 2. Perianth-tube, longitudinal section, showing the manner in which the carpels are included in the fleshy disk. 3. Perianth seen from above, the long point cut away.

Plate 1303.

LORANTHUS MANNII, *Oliv.*

Loranthaceæ.

L. (§ *Heteranthus*) **Mannii**, *Oliv.*, in *Journ. Linn. Soc.* vii. 101, ramis subteretibus, cortice glabro punctato, foliis suboppositis ovali-lanceolatis apice obtuse subacuminatis glabris petiolatis, floribus incurvis 4-meris racemosis, racemis axillaribus folio brevioribus, pedicellis

patentibus calycem æquantibus, bracteis minutis, petalis lineari-lanceolatis basi leviter dilatatis, antheris continuis linearibus multilocellatis.

Hab. Island of St. Thomas, alt. 5,000 ft., *G. Mann*!

Folia 2–3 poll. longa, $\frac{3}{5}$–1 poll. lata tenuiter coriacea; petiolus $\frac{1}{6}$–$\frac{1}{3}$ poll. longus. *Flores* $\frac{1}{2}$ poll. longi sæpius curvati.—D. Oliver.

Fig. 1. Flower. 2. Petal and adnate stamen.

Plate 1304.

LORANTHUS CURVIFLORUS, *Benth.*

Loranthaceæ.

L. (§ *Plicopetalus*) **curviflorus**, *Benth.*, ramulis teretibus, foliis alternis lineari- v. spathulato-oblongis obtusis, floribus axillaribus incurvis umbellatis, umbellis breviter pedunculatis 4–7-floris, calycis limbo subintegro tubo turbinato, petalis liberis superne attenuatis basi dilatatis intus plicis utrinque 3–5 obliquis elevatis instructis, antheris continuis longe linearibus, stigmate obtuso subcapitato.

Hab. Abyssinia, *Plowden*! and, apparently the same, Somali Coast, *Dr. Kirk*!

Folia 1–2 poll. longa, $\frac{1}{6}$–$\frac{1}{3}$ poll. lata. *Pedunculi* $\frac{1}{6}$–$\frac{1}{4}$ poll. longi; pedicelli æquilongi, apice breviter cupulatim dilatati bractea carnosula parva lateraliter gibbosi. *Flores* $1\frac{1}{2}$–$1\frac{3}{4}$ poll. longi, incurvi.

This species belongs to the section *Plicopetalus*, Bentham ('Genera Plantarum,' iii. 208), which includes also *L. undulatus*, E. Mey. of the Cape of Good Hope.—D. Oliver.

Fig. 1. Flower. 2. Petal and adnate stamen.

Plate 1305.

EUPHORBIA ZAMBESIANA, *Benth.*

Euphorbiaceæ, Tribe Euphorbieæ.

E. (*Anisophyllum*, § *Pleiadeniæ*) **zambesiana**, *Benth.*, *sp. nov.*, glabra, rhizomate crasso, caulibus numerosis pumilis ramulosis, foliis parvis

oppositis squamiformibus v. superioribus ovato-oblongis integerrimis, stipulis minimis, involucris pedicellatis terminalibus v. pseudo-axillaribus hemisphæricis brevissime lobatis, glandulis transverse oblongis, appendice lata alba petaloidea varie lobata involucro ipso sublongiore, capsula brevi.

Hab. East tropical Africa on the Zambesi, Zomba, and east end of Lake Shirwa, *Livingstone's Expedition*; Shire highlands, *Buchanan*.

Caules e rhizomate crasso carnosulo dense cæspitosi, erecti, in speciminibus floridis 1–2-pollicares, adsunt tamen hinc inde vetustiorum reliquiæ 3–4-pollicares, laxe ramosi. *Folia* inferiora squamiformia, superiora ovata v. oblonga, acutiuscula, 2–3 lin. longa, v. in speciminibus vegetioribus paris summi lanceolata subsemipollicaria, basi breviter contracta, vix tamen obliqua. *Involucra* ad apices ramulorum supra par summum pedicello 1–3 lin. longo fulta, nonnulla (ramulo aphyllo) axillaria apparent pedicello semipollicari v. longiore, 1–1½ lin. diametro, lævia, lobis sæpissime 5 minimis triangularibus v. denticulatis. *Glandulæ* transverse oblongæ, majusculæ, appendicibus petaloideis valde conspicuis albis late patentibus irregulariter et obtuse 2–4-lobis. *Bracteolæ* intra involucrum lineares, laceræ, irregulariter connatæ. *Flores* masculi subinclusi, fœmineus breviter exsertus, glaber, stylis 2-fidis recurvis breviter connatis. *Capsula* matura nobis deest.

This curious little species is totally unlike any other African or Asiatic species, but comes very near to the South Brazilian *E. potentilloides* and *E. chamærrhodos*, Boiss., figured in that author's splendid 'Icones Euphorbiarum,' tt. 24 and 25, although specifically distinct from both either in the involucre or in the styles. There are several specimens from each of three different localities, but all very similar to each other.—G. Bentham.

Fig. 1. Involucre. 2. The same opened out, showing the dorsal glands. 3. Male flowers with the bracteoles turned down. 4. Female flower.

Plates 1306, 1307.

MUSANGA SMITHII, *R. Br.*

Urticaceæ, Tribe Conocephaleæ.

M. Smithii, *R. Br. in Benn. Pl. Jav. Rar.* 49, *single species.*

Hab. Tropical Africa, on the Congo, *Chr. Smith*; Sierra Leone, *Barter, Mrs. Mair*; Fernando Po, *Barter, Mann*; and apparently the same species on the Kussumbo, Monbuttu Land, *Schweinfurth, n.* 3205.

Arbor pulcherrima, 40–80-pedalis, coma patente, ramulis crassis. *Folia* alterna, longe petiolata, ampla, peltata, fere ad basin radiatim divisa, segmentis 11–15 anguste oblongis breviter acuminatis basi longiuscule contractis interdum ultrapedalibus 2–3 poll. latis, glabris puberulisve supra viridibus subtus albidis integerrimis subtus parallele penniveniis, venulis transversis tenuissimis. *Stipulæ* in unam intrapetiolarem membranaceo-coriaceam 4-pollicarem extus tomentoso-villosam intus longe sericeo-villosam inflorescentias juniores includentem coalitæ, caducissimæ. *Paniculæ* ♂ ad axillas solitariæ, pedunculatæ, 3–4-pollicares, repetito-ramosissimæ, florum capitulis numerosis globosis vix 2 lin. diametro. *Flores* in capitulo sessiles ad axillas bractearum stipitatarum apice subpeltato-dilatatarum. *Perianthium* tubulosum, apice truncatum. *Stamen* 1, filamento recto, anthera breviter exserta. *Flores* ♀ in massas ovoideas v. obovato-oblongas 2-pollicares ad axillas geminatim pedunculatas dispositi, in capitulo sessiles, numerosissimi, arctissime conferti. *Perianthium* lineari-clavatum, vertice foramine minuto pertusum. *Ovarium* sessile, ovulo unico a basi erecto, stylo filiformi e perianthio breviter exserto. *Achænium* perianthio parum aucto fibroso-carnoso apice crasso inclusum, pericarpio duro nitido. *Semen* pericarpio conforme, erectum, testa membranacea; albumen tenue; cotyledones oblongæ æquales, radicula brevi supera.—G. Bentham.

Plate 1306, Male plant. Fig. 1. Perianth and bract. 2. Bract. 3. Perianth split open, showing the stamen.

Plate 1307, Female plant. Fig. 1. Perianth. 2. Perianth and ovary, longitudinal section. 3. Achæne. 4. Seed. 5. Embryo.

Plate 1308.

GANOPHYLLUM FALCATUM, *Blume.*

Anacardiaceæ.

G. falcatum, *Blume, Mus. Bot. Lugd. Bat.* i. 230.

Foliis 9–14-foliolatis glabris nitidis; foliolis alternis breviter petiolulatis oblique ovato-lanceolatis sæpius breviter et obtuse acuminatis integerrimis, paniculis axillaribus folio brevioribus pedunculatis, pedicellis calycem æquantibus, laciniis calycinis ovatis, staminibus (in fl. ♂) exsertis, drupis exsuccis ellipsoideis apiculatis.—*F. v. Mueller, Fragm.* vii. 24.

Hab. Indian Archipelago, *Blume and others*; Carpentaria, *R. Brown* (Herb. 5492)! Port Darwin, *Schultz*! Port Denison! Rockingham Bay and Torres Straits (*F. v. Mueller, l. c.*).

Arbor glabra innovationibus sæpius balsamo obductis. *Folia* $\frac{3}{4}$–1 ped. longa; foliola $1\frac{1}{2}$–3 poll. longa, $\frac{2}{3}$–$1\frac{1}{2}$ poll. lata. *Drupa* $\frac{1}{2}$ poll. longa utrinque acutata. *Cotyledones* incumbentes plicato-incurvæ carnosæ.

This interesting addition to the Australian flora has been well and fully described by the Baron von Mueller (*l. c.*), who points out that fruiting specimens (of which we had then only very imperfect fragments) were referred to *Euroschinus falcatus*, Hk. f., in Benth. *Flora Australiensis*, i. 490.—D. Oliver.

Fig. 1. Staminate flower. 2. Rudiment of pistil from same. 3 and 4. Side and front views of embryo.

Plate 1309.

LORANTHUS KIRKII, *Oliv.*

Loranthaceæ.

L. (§ *Acrostachys*) **Kirkii**, *Oliv. in Journ. Linn. Soc.* vii. 101, ramulis teretibus cortice glabro striato, foliis alternis v. suboppositis petiolatis, ovatis v. obovato-ellipticis obtusis glabris, floribus 4-meris in racemis multifloris terminalibus elongatis dispositis, pedicellis patentibus, bractea ovata obtusa, petalis liberis basi parum dilatatis, antheris linearibus.

Hab. Rovuma Bay and Dar Salam, E. tropical Africa, *Dr. Kirk*!

Rami sæpe verruculosi. *Folia* $\frac{3}{4}$–2 poll. longa, $\frac{3}{4}$–$1\frac{1}{2}$ poll. lata; petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Racemi* 4–6 poll. longi, breviter pedunculati vel a basi floriferi. *Pedicelli* $\frac{1}{4}$ poll. longi. *Flores* $\frac{1}{3}$ poll. longi. —D. Oliver.

Fig. 1. Flower; the bract usually does not exceed half the ovary in length. 2. Petal and adnate stamen.

Plate 1310.

FARSETIA BURTONÆ, *Oliv.*

Cruciferæ, Tribe Alyssineæ.

F. Burtonæ, *Oliver in App. iv. to Capt. Burton's Land of Midian Revisited,* 1879, caulibus divaricatis pilis malpighiaceis appressis incanis foliosis, foliis lineari-oblanceolatis acutis basi angustatis utrinque dense pilosis, racemis paucifloris, alabastris lanceolatis acutatis, petalis spathulatis, stigmate breviter bilobulato, siliqua oblonga compressa stylo persistente fere duplo longiore.

Hab. North and Central Midian, *Captain Burton*!

Herba basi suffruticosa 6–10-pollicaris, pilis simplicibus mediofixis induta. *Folia* 1–1$\frac{3}{4}$ poll. longa integra. *Pedicelli* flore breviores. *Sepala* lineari-oblonga apicem versus angustata, ungues petalorum subæquantia. *Filamenta* edentula. *Ovula* 6–7 subuniseriata. *Siliqua* $\frac{1}{3}$–$\frac{5}{12}$ poll. longa; $\frac{1}{10}$–$\frac{1}{9}$ poll. lata.

With this interesting new *Farsetia* the name of Captain Burton's most efficient and enthusiastic helpmate may well be associated.—D. Oliver.

Fig. 1. Sepal. 2. Petal. 3. Stamens. 4. Pistil.

Plate 1311.

ASTROSTEMMA SPARTIOIDES, *Benth.*

Asclepiadeæ, Tribe Cynancheæ.

Astrostemma, *Benth., gen. nov.* *Calyx* parvus, alte 5-fidus, eglandulosus. *Corollæ* tubus calyce sublongior, turbinatus; limbus dilatatus, alte 5-fidus, lobis inflexis conniventibus angustissime contorto-imbricatis. *Corona* simplex, tubo stamineo affixa, fere ad basin in lobos 5 planos stellato-patentes divisa. *Stamina* basi corollæ affixa, filamentis in tubum brevem latum connatis; antheræ membrana inflexa parva terminatæ. *Pollinia* in quoque loculo solitaria, ovoidea, ab apice pendula. *Stigma* vertice planum. *Pollinia* . . . Frutex per anthesin

aphyllus, junior folia perpauca parva ferens. Ramuli juncei, apice spicam brevem ferentes, floribus parvis.

A. spartioides, *Benth., single species.*

Hab. Bangarmassing, Borneo, common in holes of trees, looking as if it were truly parasitical, but the roots only line the holes, *J. Motley*; also Northern Borneo, *Burbidge.*

Fruticulus epiphyticus, carnosulus, habitu *Sarcostemmatis.* *Folia* in planta juniore v. in ramulis nonnullis brevissimis perpauca, opposita, ovata, semipollicaria. *Rami* floridi aphylli, ramulos emittentes plures junciformes, simplices, 3–6 poll. longi. *Spica* seu racemulus in quoque ramulo terminalis, rhachi 2–3 lin. longa parum incrassata cicatricibus annularibus notata cæterum ebracteata. *Flores* oppositi, vix 2 lin. diametro, pedicello 1 lin. longo fulti. *Fructus* nobis deest.—G. Bentham.

Fig. 1. Flower, enlarged. 2. Corona, seen from above; the anthers and glands appearing between the lobes. 3. A pair of pollen-masses with the connecting gland.

Plate 1312, 1313.

QUERCUS JENKINSII, *Benth.*

Cupuliferæ, Tribe Quercineæ.

Q. (*Chlamydobalanus*) **Jenkinsii**, *Benth., sp. nov.*, foliis integerrimis subtus pallidis, spicis erectis, masculis paniculato-ramosis, fœmineis simplicibus, involucris solitariis, fructiferis subglobosis clausis duris squamarum apicibus conicis undique echinatis, nuce incluso nec adnato, pericarpio crasso osseo, cotyledonibus crassis lævibus.

Hab. Upper Assam, *Griffith, Jenkins*; and bordering provinces of Burmah, on the Mogoung river, *Griffith.*

Arbor glabra v. inflorescentia tenuissime tomentella. *Folia* coriacea, oblonga, acuminata, 8–12 poll. longa, 3–5 poll. lata, basi acuta, petiolo $\frac{1}{2}$–$1\frac{1}{2}$ poll. longo, subtus pallida vix tamen incana, venis primariis simplicibus parallelis subtus prominentibus ad utrumque latus costæ 12–16. *Stipulæ* angustæ, caducæ. *Flores* ut videtur dioici. *Spicæ* erectæ, masculæ in panicula longa secus rhachin simplices, numerosæ, fœmineæ in axillis superioribus plures, simplices, 6–10-pollicares. *Involucra* fœminea sub bractea minima solitaria, arcte sessilia, sub anthesi 1–$1\frac{1}{2}$ lin. diametro, squamis numerosis crassis basi connatis, mox aucta globosa undique densissime echinata. *Styli* 3, breviter exserti, crassi, erecto-patentes, apice stigmatosi. *Involucrum fructiferum* globosum v.

vix longius quam latum ad $1\frac{1}{2}$ poll. diametro, minutissime tomentellum, durum at parum incrassatum, squamarum apicibus conicis v. recurvis valde prominentibus numerosissimis irregulariter zonatis undique echinatum et perfecte clausum. *Nux* inclusa, globosa, $1\frac{1}{2}$ poll. diametro, ab involucro basi excepta omnino libera; pericarpium osseum, 2 lin. crassum.

This species closely connects the sections *Chlamydobalanus* and *Lithocarpus*, having the woody pericarp of the latter, but the nut entirely free from the involucre, though enclosed in it, as in *Chlamydobalanus*. Griffith's specimens are males and females in flower and with young fruits; the ripe fruits were received from Jenkins.—G. Bentham.

Plate 1313, Male specimen; Plate 1312, Female specimen. 1. Flower, enlarged. 2. The same, the involucre cut through, showing the perianth and styles. 3. Young fruiting involucres. 4. Ripe fruit. 5. The same, transverse section.

Plate 1314.

QUERCUS MAINGAYI, *Benth.*

Cupuliferæ, Tribe Quercineæ.

Q. (*Lithocarpus*) **Maingayi,** *Benth., sp. n.*, foliis integerrimis subtus pallidis, involucris fructiferis in spica secus rhachin erectam patentibus reflexisve oblongo-turbinatis clausis velutino-tomentellis, lineis paucis vix prominentibus zonatis, vertice depressis demum circumscisse scutiferis, nuce inclusa fere ad apicem adnata, pericarpio crasso duro.

Hab. Penang; found about a mile from the top of the hill, *Maingay*.

Arbor procera, ramulis inflorescentiaque minute ferrugineo-tomentellis. *Folia* 8–10 poll. longa, 4–6 poll. lata, coriacea, breviter acuminata, basi cuneata, petiolo $\frac{1}{2}$–1-pollicari, subtus pallida at vix canescentia, venis primariis simplicibus parallelis subtus prominentibus ad utrumque latus costæ 15–20. *Flores* nobis desunt. *Pedunculus* fructifer 4–6-pollicaris, erectus. *Involucra* 3–4, matura subsesquipollicaria poll. diametro, ima basi valde attenuata quasi crasse pedicellata, tomento minuto ferrugineo subvelutina, lateribus zonis 2–3 parum prominulis notatis, vertice subplano centro umbonato zonis 2–3 notato demum scutiformi circumscisse deciduo. *Nux* involucro fere ad apicem arcte adnata, pericarpio duro subsuberoso 2–$2\frac{1}{2}$ lin. crasso.

Evidently allied to the *Lithocarpus scutigera* of Oudemans, but with a differently shaped fruit, and if that is founded on the *Quercus costata* of Blume, the foliage is also quite distinct.—G. Bentham.

Plate 1315.

QUERCUS BECCARIANA, *Benth.*

Cupuliferæ, Tribe Quercineæ.

Q. (*Lithocarpus*) **Beccariana,** *Benth., sp. n.*, foliis integerrimis subtus pallidis subcanescentibus, spicis erectis, masculis paniculatis, fœmineis simplicibus, involucris fœmineis secus rhachin solitariis sessilibus ovoideis v. fructiferis obovoideis lineis parum prominentibus zonatis glabris perfecte clausis, nuce inclusa fere ad apicem adnata, pericarpio duro crasso.

Hab. Borneo, *Beccari, n.* 3310.

Specimina nostra præter canescentiam minutissimam inflorescentiæ et paginæ inferioris foliorum glabra. *Folia* oblonga, breviter acuminata, 3–4 poll. longa, 1–1½ poll. lata, basi acuta, petiolo 5–6 lin. longo, coriacea, supra nitidula, venis primariis simplicibus parallelis in pagina inferiore prominulis ad utrumque latus costæ 6–8. *Spicæ* masculæ pollicares v. terminales longiores, in panicula terminali 6–8, fœmineæ inferiores simplices, sub fructu 2–3-pollicares. *Involucra* sub anthesi 2–3 lin. longa, arcte sessilia, glabra, zonis prominulis 6–8 annulata. *Styli* 3, breves, crassi, ex apice prominuli, stigmatibus terminalibus. *Involucrum fructiferum* 2–2½ poll. longum, 1½ poll. diametro, vertice non depressum et prominenter umbonatum, quam in *Q. Maingayi* crassius, nucem arcte includens et ut videtur omnino indehiscens. *Nux* fere ad apicem adnata, pericarpio 2 lin. crasso duro.—G. Bentham.

Fig. 1. Male flower. 2. Female flower. 3. The same, longitudinal section showing the pistil. 4. Ripe fruit. 5. The same, longitudinal section.

Plate 1316.

PERSEA NANMU, *Oliv.*

Laurineæ, § Perseaceæ.

P. (*Phœbe*) **Nanmu,** *Oliv., sp. nov.*, arbor procera; foliis e basi attenuatis oblanceolatis oblongo-oblanceolatisve obtusiuscule acuminatis supra glaberrimis subtus nervo medio glabro excepto appresse sericeo-puberulis, paniculis sæpius in corymbum terminalem folio vix æquantem congestis perianthiisque sericeo-pubescentibus.

Hab. Sze-chuen, *Father Vincot* ! and Yunnan, Western China.

Ramuli graciles læves cito glaberrimi. *Folia* 3–6 poll. longa, 1–2 poll. lata, longiuscule petiolata. *Pedicelli* floribus æquilongi v. iisdem longiores appresse sericei. *Perianthium* sericeo-pubescens, segmentis subæquilongis, exterioribus oblongo-ellipticis interioribus latioribus intus sericeis. *Stamina* glabra. *Ovarium* in stylo attenuatum glabrum.

Specimens of this laurel have been transmitted to Kew by Mr. Davenport, of H.M.'s Consulate at Shanghai, with a view to the identification of the species affording the durable and highly valued timber known in China as *Nanmu*. E. Bradford, Esq., has also contributed additional examples, which enable us to determine its very close relationship to *Persea* (*Phœbe*) *pallida* and *P. lanceolata* (Nees): if, indeed, *P. pallida* be rightly reduced to *P. lanceolata* as Dr. Brandis suggests ('Forest Flora,' 377), probably the *Nanmu* can scarcely be maintained as distinct. It differs from *P. pallida* chiefly in stature, in the form of the acumen of the leaves, and the character of the indumentum. For detail respecting the *Nanmu* timber, see 'Report of the Royal Gardens, Kew,' 1877, p. 33.—D. Oliver.

Fig. 1. Unexpanded flower; the outer segments are represented as relatively too short. 2. Section of flower. 3. Section of pistil.

Plate 1317.

MODECCA ACULEATA, *Oliv.*

Passifloreæ, Tribe Modeccæ.

M. aculeata, *Oliv., MSS. in Herb. Kew.* aphylla, caule scandente 5-gono, angulis incrassatis aculeis brevibus rectis creberrimis 1-seriatis instructis, fl. ♂ secus rhachin inermem elongatam gracilem fasciculatis, perianthio lineari-oblongo, sepalis lineari-oblongis obtusis, petalis æquilongis angustioribus acutis membranaceis, corona brevi lacera, glandulis globosis, filamentis basi connatis, antheris lineari-oblongis obtusis, fl. ♀ masculo breviores petalis multo minoribus, ovario 3-gono basi et apice constricto, stigmate subsessili crasso umbraculiformi carnoso obtuso.

Hab. Somali Land in equatorial Eastern Africa, *Dr. Kirk.*

Caulis crassitie pennæ anatinæ, rigidus, subgeniculatim flexuosus, sordide albidus, faciebus inter angulos obtusos suberosos aculeiferos profunde exsculptis; aculei $\frac{1}{12}$ ad $\frac{1}{8}$ poll. longi, e basi lata subulati, rigidi, pungentes. *Cirrhi* validi, læves. *Folia* in exemplaribus nostris omnino desunt. *Fl.* ♂ rhachis 3–4-pollicaris, ut videtur erecta, ad

fasciculos florum in pulvinos intumescens; bracteolæ in pulvinis minutæ, subulatæ; flores gracile breviter pedicellati. *Perianthium* ♂ $\frac{1}{2}$–$\frac{2}{3}$ poll. longum, sepalis concavis petalisque erectis; ♀ magis campanulatum, masculo dimidio brevius, sepalis latioribus et petalis abbreviatis, staminodiis 5 subulatis. *Capsulæ* in rhachi brevi aggregatæ, 3-gono-globosæ, $\frac{2}{3}$ poll. diametro, pallidæ, læves, valvis tenuiter coriaceis. *Semina* parva, orbicularia, valde compressa, testa irregulariter impresso-punctata.

This is certainly a most remarkable species of *Modecca*, if, indeed, it should not form a subgenus characterised by the habit and the curious entire large umbraculiform stigma, in which I see no trace of lobing. The female flowers I have not seen *in situ*, and cannot say whether they are seated on an elongated rhachis like the males; the capsules are certainly aggregated on a short rhachis, but the latter may be only a lower node of what was an elongate one. The prickles of the stem are unique in the genus; they are confined to the thickened angles, which are uniformly corky.—J. D. Hooker.

Fig. 1. Vertical section of ♂ flower. 2. Petal. 3. Stamen. 4. Vertical section of ♀ flower.—*All enlarged.*

Plate 1318.

STELLULARIA NIGRICANS, *Benth.*

Scrophularineæ, Tribe Gerardieæ (Buchnereæ).

Stellularia, *Benth., gen. nov.* *Calyx* tubulosus, 7–8-nervis, dentatus v. breviter 4-fidus. *Corollæ* tubus tenuis, rectus, limbus stellato-patens, subæqualiter 5-partitus, lobis undulatis vix levissime imbricatis (2 posticis interioribus?). *Stamina* 4, inclusa, didynama, filamentis brevibus; antheræ 1-loculares, dorso affixæ, rima longitudinali dehiscentes, muticæ. *Stylus* apice incrassatus stigmatosusque, indivisus; ovula in loculis numerosa. *Capsula* oblonga, corollæ tubo marcescente inclusa, septo contrarie compressa, loculicide dehiscens. *Semina* numerosa (angulata?), in speciminibus vix matura. *Herbæ* erectæ, siccitate nigricantes. *Folia* opposita. linearia. *Flores* in spica terminali sessiles, singuli bractea bracteolisque 2 stipati.

S. nigrescens, *Benth.* (*single species*?).

Hab. West tropical Africa, Angola Expedition, *Welwitsch*, *n.* 5838.

Herba erecta, rigidula, ut videtur annua et verisimiliter in radicibus semiparasitica, pilis brevibus conspersa, siccitate nigricans, ramis oppositis erectis. *Folia* subsessilia, majora $1\frac{1}{2}$-pollicaria, fere 2 lin. lata, ramealia minora et angustiora, omnia integerrima scabro-puberula. *Spicæ* supra foliorum par ultimum breviter pedunculatæ. densæ, cylin-

draceæ, 1½–2-pollicares. *Bracteæ* ovatæ, ad 2 lin. longæ, 4-fariam imbricatæ, ciliatæ; bracteolæ breviores, angustæ. *Calyx* bracteam æquans. *Corollæ* tubus calyce subduplo longior, limbi lobi stellato-patentes lineam longi.

In all essential characters, this plant appears to be very nearly allied to *Buchnera*, but in a considerable number of flowers examined I have always found the calyx 4-merous with a 5-merous corolla, and the peculiar stellulate limb of the corolla reminds one of a *Manulea* or of *Selagineæ*. Welwitsch's n. 5837 is either a variety of the same species or possibly a second species with very narrow linear leaves, the spike twice as long and not so dense, narrow bracts and rather more slender corollas, but here, as in the typical form, there is the same difference in the number of parts of the calyx and corolla.—G. Bentham.

Fig. 1. Flower, with the bract and bracteoles (the bract rather too small). 2. Corolla. 3. Calyx. 4. Corolla cut open, showing the stamens. 5. Stamens. 6. Pistils, the ovary cut longitudinally, showing the ovules.

Plate 1319.

LORANTHUS ATKINSONÆ, *Benth.*

Loranthaceæ.

L. Atkinsonæ, *Benth.*, frutex terrestris 2–3-pedalis glaberrimus; foliis oppositis alternisve oblongo-lanceolatis obtusis basi angustatis, racemis axillaribus folio brevioribus, floribus tribracteatis, petalis liberis sæpius 6 patentibus linearibus, fructu drupaceo, endocarpio lignoso intra sulcos albuminis longitudinaliter intruso.

Atkinsonia ligustrina, *F. v. Mueller*; *Benth. Fl. Austral.* iii. 388.—Nuytsia ligustrina, *A. Cunn.*

Hab. Blue Mountains, New South Wales, *Cunningham*! *F. von Mueller*! and others.

Folia sæpius 1-1½ poll. longa, ¼–⅓ poll. lata, basi in petiolum brevem angustata. *Bractea* bracteolæque subæquilongæ lineari-lanceolatæ ovario sæpius breviores, plus minus recurvæ. *Petala* ¼ poll. longa.

This plant, now reduced by Mr. Bentham to *Loranthus* ('Gen. Plant.' iii. 212), section *Gaiadendron*, requires a new specific name, *ligustrinus* being preoccupied by a well-known Indian species.—D. Oliver.

Fig. 1. Expanded flower. 2. Petal and adnate stamen, and detached anther. 3. Transverse section of fruit. 4. Embryo, with its subequal cotyledons and remains of suspensor.

Plate 1320.

LEPTOGONUM DOMINGENSE, *Benth.*

Polygonaceæ, Tribe Triplarideæ.

L. domingense, *Benth. in Benth. et Hook. Gen. Pl.* iii. 104, *single species.*

Hab. Island of Santo Domingo, near Agua, San Juan, on edges of savannahs, *Schomburgk, n.* 34 *and* 122.

Frutex arborescens v. arbor parva, ramulis novellis ferrugineo-villosulis, defoliatis reliquiarum ocrearum annulatis. *Folia* alterna, ad apices ramulorum conferta, vix petiolata, elliptico-oblonga, 2–3-pollicaria, acutiuscula v. obtusa, integerrima v. obscure sinuato-crenata, basi contracta, rigidula, pennivenia, venis primariis parallelis valde prominulis, supra scabriuscula, subtus rufescentia ad venas puberula. *Ocreæ* brevissimæ, interdum ad annulum parum prominentem reductæ. *Spicæ* tenues, in innovationibus brevibus ad apices ramulorum inter folia 2–5 pedunculo communi brevi affixæ, graciles, erecti v. nutantes, pilis sericeis ferrugineis vestitæ. *Flores* vix 2 lin. longi, sericeo-villosi, secus rhachin spicæ intra bracteolam brevem oblique cupulatam solitarii v. gemini. *Perianthium* anguste tubulosum, alte 6-fidum, lobis angustis, 3 majoribus exterioribus e bracteola exsertis, 3 alternis multo minoribus inclusis. *Stamina* 3, tubo inclusa, lobis minoribus opposita, filamentis brevibus. *Ovarium* globoso-3-gonum, 3-sulcum, loculo centrali parvo; stigmata 3, parva, erecta; ovulum ab apice funiculi erecti pendulum. *Fructus* ignotus.

This curious genus is in many respects allied to *Ruprechtia*, but the flowers are perfectly hermaphrodite, and the ovule suspended from an erect funicle is that of *Brunnichia*.—G. Bentham.

Fig. 1. Bracteole, enclosing the flower of which the three longer lobes protrude, and subtended by a small bract. 2. Bracteole further advanced, showing the enclosed flower. 3. Flower with a second bud or imperfect flower, the bracteole removed. 4. Flower opened out, showing the stamens and ovary. 5. Stamens. 6. Ovary. 7. The same, longitudinal section showing the ovule and funicle.

Plate 1321.

OXYGONUM ALATUM, *Burch.*

Polygonaceæ, Tribe Eupolygoneæ.

P. alatum, *Burch. Trav.* i. 548, annuum, papilloso-scabriusculum v. glabrum, foliis lanceolatis dentatis v. inciso-pinnatifidis, pedicellis 1–3-

nis bractea subduplo longioribus, perianthii fructiferi angulis membranaceo-alatis v. rarius medio cornutis.

Hab. South Africa; Griqualand, on or near the Sand river, a small affluent of the Orange or Gariep river, *Burchell*, *Zeyher*; and on the Orange river, probably in the same neighbourhood, *Barber*.

Caules basi ramosi, tenues at rigidi, ascendentes, ½–1 pedales. *Folia* majora latiuscule lanceolata, 1½–2 pollicaria, irregulariter inciso-pinnatifida, in petiolum contracta, alia multo minora, angusta, dentata v. hinc inde integerrima. *Ocreæ* laxe turbinatæ, membranaceo-scariosæ, truncatæ, margine setis nonnullis longiusculis ciliatæ v. nudæ. *Flores* inferiores sæpe axillares, superiores in racemum longum interruptum aphyllum dispositi, pedicellis intra bracteas ocreiformes dissitas sæpius geminis filiformibus 2–2½ lin. longis; masculi in speciminibus nostris pauci, perianthio fide Burchellii 4-fido, in floribus examinatis ut in hermaphroditis 5-fido, omnes parvi, perianthii laciniis vix linea longioribus. *Perianthii fructiferi* limbus clausus marcescens, tubus auctus 3–4 lin. longus, angulis 3 nunc in alam scariosam 1½–2 lin. latam expansus, nunc rarius exalatus, medio v. supra medium dente v. cornu patente instructus.

Meissner, in De Candolle's *Prodromus*, xiv. 38, 39, distinguished two genera, *Oxygonum* and *Ceratogonum*, placed in two different tribes, having misunderstood Burchell's expression (in characterising *Oxygonum*) 'fructus 3-alatus,' which applied to the whole fruit, not to the enclosed achænium. The other character, the angles of the fruiting perianth winged or toothed only, falls to the ground, as both forms are sometimes seen on the same specimen in *O. alatum*; the form represented in the plate, fig. 2, is very rare. When the tooth or horn is prominent, it is usually below the middle, and sometimes it is continued both above and below into a narrow wing.—G. Bentham.

Fig. 1. Hermaphrodite flower. 2. Fruit with toothed angles. 3. Fruit with winged angles. The perianth-limb remains long attached, as in the winged fruit represented still attached to the raceme.

Plate 1322.

DIMORPHOCHLAMYS MANNII, *Hook. f.*

Cucurbitaceæ, Tribe Cucumerineæ.

D. Mannii, *Hook. f. in Benth. et Hook. Gen. Pl.* i. 827; *Oliv. Fl. Trop. Afr.* ii. 550.

Hab. Western tropical Africa; Fernando Po, *Vogel*, *Mann*; Old Calabar river and Ambas Bay, *Mann*, *Rev. W. C. Thomson*.

Dioica. *Caulis* gracilis, scandens, 8–15-pedalis, angulatus, firmus. *Folia* 3–5 poll. longa, petiolata, rigide coriacea, late ovato- v. rotundato-cordata, acuminata, denticulata, utrinque scabrida, subtus reticulatim venosa, sinu basilari aperta; petiolo $\frac{1}{2}$–$\frac{3}{4}$-pollicari. *Cirrhi* simplices v. 2-fidi. *Flores* dimorphi; ♂ ad axillas fasciculati, pedicello (calycisque tubo) in alam obovato-cuneiformem membranaceam reticulatim venosam dilatato; bracteolæ parvæ, recurvæ. *Calyx* 5-lobus, lobis 5 ovatis, acutis, dorso breviter alatis. *Corolla* campanulata, pollicaris; segmenta 5, ovato-oblonga, acuta, extus furfuracea. *Filamenta* 3, libera, antheræ connatæ v. demum liberæ, una 1-locularis, duo 2-loculares, loculis linearibus conduplicatis. *Fl.* ♀ solitarii, parvi, pedicellis non alatis. *Calycis* limbus supra ovarium breviter productus; segmenta 5, linearia, patentia, persistentia, demum decrescentia et fructum coronantia. *Corolla* 5-partita, segmentis oblongis extus furfuraceis. *Staminodia* 0. *Ovarium* ellipsoideum, furfuraceum; stylus columnaris, stigmatibus 3 peltatis globosis; placentæ 3, multiovulatæ. *Bacca* globosa, 2–3 poll. diam., calycis segmentis elongatis rigidis loriformibus pericarpio duro granulato appressis coronata, polysperma. *Semina* magna, pollicaria, oblongo-quadrata, crassa, granulata, utrinque appendiculata et dentata, faucibus planiusculis sulco intramarginali quadrato insculptis, lateribus convexiusculis marginatis; cotyledones crassæ.—J. D. Hooker.

A very singular genus, allied to *Cephalandra*, remarkable for the winged pedicel and calyx of the male flower, and the more singular calyx of the female, which enlarges greatly after flowering, and is persistent in the ripe fruit, a character probably unique in the order.

Fig. 1. Calyx of ♂. 2. Stamens. 3. ♀ flower. 4. Fruit. 5. Seeds.—Figs. 1 and 2 *enlarged*.

Plate 1323.

ABROPHYLLUM ORNANS, *Hook. f.*

Saxifrageæ, Tribe Escallonieæ.

A. ornans, *Hook. f. in Benth. et Hook. Gen. Plant.* i. 647; *Benth. Fl. Austral.* ii. 437.—Brachynema ornans, *F. Muell. Fragmenta*, iii. 90.

Hab. New South Wales; banks of the Grose river, *Brown*; Mount Tomah, Blue Mountains, *A. and R. Cunningham*; Richmond river, near Ballena, *C. Moore*.

Frutex ramulis gracilibus petiolis nervis subtus cymisque pube appresse hirsutulis. *Folia* 6–12-pollicaria, membranacea, gracile petiolata, elliptico-lanceolata, acuminata, basi attenuata, remote dentata, dentibus apiculatis, supra et subtus nervis exceptis glaberrima, petiolo

1–2-pollicari; stipulæ 0. *Cymæ* pedunculatæ, irregulariter ramosæ. *Flores* pedicellati, $\frac{1}{3}$ poll. diam. *Sepala* 4–6, decidua. *Petala* 4–6, ovata, patula, decidua, æstivatione valvata. *Stamina* 4–6, margine disci inconspicui inserta, filamentis brevissimis; antheræ magnæ, petala subæquantes. *Ovarium* basi lata sessile, ovoideo-oblongum, 4–5-loculare; stigma sessile, 4–5-lobum; ovula in loculis numerosa. *Bacca* pisiformis. *Semina* minuta, testa punctata.

As stated by Bentham in the 'Flora Australiensis,' I had described this genus under the above name for the 'Genera Plantarum' (and with the specific name of *Cunninghamii*) before the arrival at Kew of the third volume of Mueller's 'Fragmenta,' wherein I found it described (all but the fruit) as *Brachynema ornans*; and the name *Brachynema* being preoccupied, I was compelled to adopt my own generic name, and my friend Mueller's specific one. It is interesting to find that this curious plant had not escaped Brown's keen observation; specimens of it are contained in his Herbarium, collected seventy years ago, during half a century of which they, together with the rest of his magnificent collections, were jealously closed to botanists. The fruit, which in Cunningham's specimens appears to be oblong, is in Brown's distinctly globose.—J. D. Hooker.

Fig. 1. Flower. 2. Stamens. 3. Calyx and ovary. 4. Berry. 5. Transverse section of berry.—All but fig. 4 *enlarged*.

Plate 1324.

PHACELLARIA RIGIDULA, *Benth.*

Santalaceæ, Tribe Osylideæ.

P. rigidula, *Benth. in Benth. et Hook. Gen. Pl.* iii. 229, caulibus teretibus rigidulis ramosis.

Hab. East India; Mergui, *Griffith*.

Fruticulus in *Lorantho* quodam parasiticus, caulibus dense fasciculatis teretibus ramosis rigidulis 3–5-pollicaribus, $\frac{1}{2}$ lin. v. majoribus vix 1 lin. crassis glabris aphyllis. *Squamellæ* ad nodos alternæ, minutæ dentiformes v. vix prominentes. *Flores* ad nodos secus ramos sparsi, solitarii v. fasciculati, sessiles, masculi subglobosi $\frac{1}{2}$ lin. diametro, fœminei ovoidei, demum lineam longi. *Perianthii* tubus in flore masculo solidus, in fœmineo ovario adnatus, lobi 4 v. 5, usque ad discum soluti, breves, crassi, æstivatione valvati. *Stamina* 4 v. 5, basi loborum affixa iisque breviora, filamentis brevissimis, crassis; antheræ terminales, loculis distinctis divaricatis longitudinaliter dehiscentibus. *Discus* subplanus, inter stamina v. inter lobos perianthii angulatus.

Ovarium inferum, 1-loculare; stylus brevissimus, crassiusculus, stigmate integro discoideo; placenta in centro loculi brevis, erecta, ovulis 3 ab apice pendulis. *Fructus* junior ovoideo-oblongus; maturus adhuc non visus.

This curious parasite, with the habit of some of the leafless *Viscu*, has nevertheless all the characters of a *Santalacea*, where its nearest affinity appears to be with the Australian *Leptomeria*.—G. Bentham.

Fig. 1. Male flower, seen from above. 2. One of the lobes with the stamen at its base. 3. Female flower. 4. The same, longitudinal section showing the ovary-cell and placenta, with two of the ovules.

Plate 1325.

ARAGOA LYCOPODIOIDES, *Benth.*

Scrophulariaceæ, Tribe Digitaleæ.

A. lycopodioides, *Benth. sp. nov.* ramulis lanatis, foliis glabris lobulatis trigonis carinatisve acutiusculis incurvo-imbricatis, calycis lobis ovato-ellipticis margine apicem versus lanatis, corollæ fauce villosa.

Hab. New Granada, *Purdie*! Ocaña, *Schlim*! *Kalbreyer*!

Frutex pyramidalis, 3–6-pedalis, ramosissimus, ramulis teretibus confertis lanatis. *Folia* 1–1½ lin. longa multifariam imbricata. *Flores* breviter pedicellati v. subsessiles ⅓–½ poll. diam. *Calyx* foliolis concavis coriaceis dorso glabris. *Corolla* rotata, alba, lobis obovatis obtusis, margine glabris. *Stamina* exserta. *Capsula* ovoidea calycem æquans v. superans stylo filiformi persistente coronata.

Differs from *A. abietina* in the lanate branches, much shorter leaves and villous throat of corolla; from *A. cupressina* in the narrow trigonous or keeled leaves, which are not closely appressed as in that species.—D. Oliver.

Fig. 1. Expanded flower. 2. Stamen. 3. Section of calyx, showing pistil. 4. Calyx and capsule. 5. Portion of ultimate twig.

ICONES PLANTARUM.

Plate 1326.

LANESSANIA TURBINATA, *Baill.*

URTICACEÆ, Tribe ARTOCARPEÆ.

L. turbinata, *Baill. Adans.* xi. 298.

HAB. North Brasil, in the Capoeiras at Barra do Rio Negro, where it is known under the name of *Mururé*, *Spruce*, *n.* 1825.

Arbor 20-pedalis, ramulis petiolis venis paginæ inferioris foliorum receptaculisque tomento brevi rufescentibus, succo lacteo sordido. *Folia* alterna, breviter petiolata, elliptico-oblonga, breviter et anguste acuminata, basi rotundata, coriacea, supra glabra læviuscula pennivenia, venis primariis et rete venularum subtus prominentibus, 3–5 poll. longa, 2–2½ poll. lata; stipulæ parvæ, caducæ. *Receptacula* ad nodos inferiores ramuli hornotini in axillis solitaria, pedicello petiolum vix excedente mox recurvo fulta, anguste turbinata v. obpyramidata, 5–6 lin. longa, carnosula, in vivo basi fulva superne pallida. *Bracteæ* circa marginem receptaculi fere tuberculiformes, obscure 2–3-seriatæ. *Flores* ♂ numerosi, apicem explanatum receptaculi obtegentes, arcte conferti, basi subconnati. *Perianthium* tubulosum, carnosulum, brevissime obtuseque 3–4-fidum. *Stamina* 2, rarius 3, filamentis inclusis rectis crassis; antheræ parvæ, loculis adnatis. *Ovarii* rudimentum 0 v. minute subulatum. *Flos* ♀ in centro receptaculi unicus. *Perianthium* a receptaculo carnoso haud distinctum, canalem centralem efficiens. *Ovarium* in fundo receptaculi inferum; stylus intra canalem liber, apice exsertus, ramis stigmatosis elongatis; ovulum ex apice loculi pendulum.

The fruit of this species is unknown, but specimens of what would appear from the foliage and inflorescence to be a nearly allied congener

have small globular succulent fruits, not yet ripe. They were gathered by Spruce in the Managuiry-gapo, at the mouth of the Solimoes, from a shrub known to the natives by the name of *Caimbé*, and distributed with the n. 1635. Being passed flower, they cannot be named or properly described.—G. Bentham.

Fig. 1. Fleshy receptacle, vertical section. 2. A male flower, cut open.

Plate 1327.

SCYPHOSYCE MANNIANA, *Baill.*

Urticaceæ, Tribe Artocarpeæ.

S. Manniana, *Baill. Adans.* xi. 293.

Hab. West tropical Africa, Sierra del Crystal, *G. Mann, n.* 1727.

Frutex humilis, caule simplici 6–9-pollicari tomento brevi fusco vestito. *Folia* alterna, breviter petiolata, elliptico-oblonga, acuminata, infra medium angustiora, membranacea v. chartacea, integerrima v. obscure denticulata, pennivenia, glabra v. subtus ad venas parce scabro-puberula, 3–5 poll. longa. *Stipulæ* liberæ angustæ. *Receptacula* in axillis superioribus solitaria, pedicello petiolum breviter superante fulta, tubuloso-cupulata, $1\frac{1}{2}$ lin. longa, basi florifera carnosula, parte superiore v. limbo cupulato membranacea, margine breviter 4–5-loba. *Flores* ♂ in fundo receptaculi pluri-seriati, apice exserti. *Perianthium* anguste tubulosum, obtuse minuteque 2–4-dentatum. *Stamen* 1, filamento recto; anthera oblonga, erecta, exserta. *Ovarii* rudimentum 0. *Flos* ♀ in centro receptaculi unicus. Perianthium e segmentis 2 distinctis latis uno alterum pistillumque involvente, perianthio masculo æquilongum. *Ovarium* superum, sessile; stylus subulatus, primum centralis, demum fere lateralis, ramis stigmatosis exsertis subfiliformibus; ovulum apice oblique affixum, pendulum. *Fructus* junior ovoideo-globosus, nitidus, receptaculi limbo deciduo denudatus, reliquiis florum masculorum cinctus.

This interesting plant, allied in some respects to *Bosquiea* of Thouars, is described on the collector's label as herbaceous, probably from its small stature; for the stem, though simple and often not even six inches high above the rooting base, appears certainly perennial and woody in the lower portion.—G. Bentham.

Fig. 1. Head of flowers, vertical section, showing the fleshy base of the receptacle and several male flowers with the central female one, the two perianth segments opened out and partially cut away to show the ovary and style. 2*a*. Male flower. 2*b*. Stamen.

Plate 1328.

BRUNNICHIA AFRICANA, *Welw.*

Polygonaceæ, Tribe Coccolobeæ.

B. africana, *Welwitsch in Trans. Linn. Soc.* xxvii. 61, scandens, ramulis striatis puberulis, foliis ellipticis apiculatis basi cuneatis subrotundatisve petiolatis, cirrhis axillaribus apice bifidis, floribus fasciculatis in racemis simplicibus terminalibus dispositis, pedicellis plano-compressis fructiferis accrescentibus bialatis alis subæquilatis fere ad basin pedicelli decurrentibus.

Hab. Golungo Alto, Angola, *Dr. Welwitsch!*

Frutex gracilis, ramulis patentibus, late scandens. *Folia* $2\frac{1}{2}$–$3\frac{1}{2}$ poll. longa, $1\frac{1}{2}$–2 poll. lata, membranacea; petiolus $\frac{1}{4}$–$\frac{1}{2}$ poll. longus. *Cirrhi* graciles folio longiores. *Racemi* $\frac{1}{4}$–$\frac{1}{2}$ ped. longi, fructiferi pedales, glanduloso-puberuli; bracteæ 2–5-floræ. *Fructus* ovoideus costulatus perianthii lobis persistentibus coronatus; pedicelli fructiferi 2–3 poll. longi; alæ $1\frac{1}{2}$ lin. latæ.

Fully described by Dr. Welwitsch (*l.c.*). Differs from *B. cirrhosa* in the form of the leaves, and more especially in the long winged pedicel, the wings nearly equal on each side, not confined to one side or nearly so, as in *B. cirrhosa*.—D. Oliver.

Fig. 1. Flower. 2. Same laid open and enlarged. 3. Stamens. 4. Fruit and alate pedicel.

Plate 1329.

ROSA ECÆ, *Aitchison.*

Rosaceæ, § Roseæ.

Rosa Ecæ, *Aitchison in Journ. Linn. Soc. Bot.* xviii. 54. humilis aculeatissima, aculeis homomorphis rectis rigidis patentibus basi plus minus dilatatis, foliis parvulis 5–7(–9)-foliolatis parce glandulosis, floribus aureis solitariis pedunculatis, fructu globoso glabro nitido calycis laciniis reflexis coronato.

Hab. A common and characteristic shrub from Habibkalla to Alikbél, Afghanistan, 'forming with *Amygdalus eburnea* the greater part of the scrub on the stony ridges of the Hariáb district.'

Frutex erectus 3–4-pedalis, ramosus; ramis gracilibus glabris junioribus ruberrimis; aculeis in ramis floriferis confertis $\frac{1}{3}$–$\frac{1}{2}$ poll. longis. *Folia* $\frac{1}{2}$–1 poll. longa; foliola obovata v. elliptica serrata glabrata v. subtus parce glandulosa; stipulæ parvæ. *Flores* $\frac{3}{4}$–1 poll.

diam.; pedunculi $\frac{1}{6}$–$\frac{2}{3}$ poll. longi, glabrati; calycis segmenta oblongo-lanceolata indivisa vel apicem versus denticulata intus plus minus albido-sericea. *Fructus* $\frac{1}{4}$–$\frac{1}{3}$ poll. diametro; achænia glabrata, stylis persistentibus villosissimis.

The characters of this very interesting yellow Rose are chiefly taken from Dr. Aitchison's paper cited above, with the specimens before me. —D. Oliver.

Plate 1330.

PENIANTHUS LONGIFOLIUS, *Miers*, *fl.* ♂.

Menispermaceæ.

P. longifolius, *Miers in Ann. Nat. Hist.* ser. iii. xiii. 124; *Contrib. Bot.* iii. 372, t. 149. Frutex glaber; foliis obovato-ellipticis obtusiusculе acuminatis basi sæpe plus minus cuneatis longe petiolatis, floribus ♂ in glomerulis subglobosis multifloris sessilibus v. breviter pedunculatis confertis, perianthii segmentis liberis 6 v. 5 obovatis biseriatis, exterioribus paullo brevioribus, staminibus liberis 6 v. 5, filamentis leviter superne dilatatis, antheris bilocularibus longitudinaliter dehiscentibus perianthio subbrevioribus.

Hab. Camaroons Mountains, 500 feet. (Fl. ♀, Fernando Po). *Gustav Mann.*

Folia tenuiter coriacea 5–7 poll. longa, $2\frac{1}{2}$–$3\frac{1}{2}$ poll. lata, petiolus ad 2 poll. longus sulcatus supra canaliculatus, apice incrassatus. *Glomeruli floriferi* $\frac{1}{6}$–$\frac{1}{4}$ poll. diam.

The female flowers are described by Mr. Miers (*Contrib.* l.c.), and in 'Flora of Tropical Africa' i. 50. The specimens now described, bearing staminate flowers, had been sorted away in Artocarpeæ, and so were not at hand when I described the plant in 1868.—D. Oliver.

Fig. 1. Detached flower. 2. Stamen and opposed inner perianth-segment.

Plate 1331.

CEPHALANTHUS NATALENSIS, *Oliv.*

Rubiaceæ, Tribe Naucleeæ.

C. natalensis, *Oliver*, *sp. n.*, ramosissimus, ramulis ultimis puberulis, foliis ovatis v. ovato-ellipticis breviter acuminatis acutis v. obtusiusculis glabratis v. costa subtus petioloque puberulis, capitulis terminalibus

breviter pedunculatis, calycis limbo supra ovarium producto obtuse dentato, corolla tubulosa superne infundibuliforme dilatata.

Hab. Natal, *Gerrard* (1495); Transvaal, *Dr. Atherstone.*

Folia $\frac{3}{4}$–$1\frac{1}{2}$ poll. longa, tenuiter coriacea, rete venularum inconspicuo; petiolus 1 lin. longus. *Capitula* globosa florifera 1 poll. diam.; pedunculus $\frac{1}{4}$—$\frac{1}{2}$ poll. longus, pubescens. *Corolla* $\frac{1}{3}$ poll. longa, tubo inferne gracili fere glabro, ore sæpe leviter obliquo. *Antheræ* vix exsertæ lineari-oblongæ mucronulatæ. *Stylus* longiuscule exsertus, apice clavatus.

The fruit-heads are said to become sufficiently succulent to be edible.—D. Oliver.

Fig. 1. Detached flower. 2. Longitudinal section of ovary and calyx-tube.

Plate 1332.

CARMICHAELIA KIRKII.

Leguminosæ, Tribe Galegeæ.

C. Kirkii, *Hook. f. n. sp.*; sparse pilosa, ramis gracillimis cylindraceis sulcatis, foliis 3–5-foliolatis, foliolis orbiculari-obcordatis, racemis 3–5-floris, floribus $\frac{1}{2}$ poll. longis, longe pedicellatis, legumine ellipsoideo turgido longe rostrato.

Hab. New Zealand: Otago, prov., in the Cardrona Valley, *T. Kirk*; Otapopo, *M. Petrie.*

Laxe ramosa, ramis ramulisque sparsis divaricatis, ramulis petiolisque tenuiter sericeis v. pilosulis. *Folia* sparsa, petiolo cum rachi $\frac{1}{4}$–1 poll. longo, foliolis $\frac{1}{6}$—$\frac{1}{4}$ poll. longis glaberrimis sinu acuto lobis rotundatis. *Pedunculi* foliis æquilongi v. breviores gracillimis floribus pedicellatis, bracteolis ciliatis. *Calyx* campanulatus, glabratus, dentibus intus sericeis acutis. *Vexillum* orbiculare, 2-lobum; carina falcata alis spathulatis breviore. *Ovarium* glaberrimum. *Legumen* $\frac{1}{2}$ poll. longum, rostro valido recto pungente 2-spermo, valvis obscure reticulatis, replo crasso lato lævi.

This differs from all the described species of *Carmichaelia* in the very slender habit, cylindric lax spreading almost filiform branches, large flowers and long beaked pod. It forms the tenth species of a genus long supposed to be peculiar to New Zealand, but of which one species has been found in Lord Howe's Island, the vegetation of which, as indicated by its position, shows the characters of those of Australia and New Zealand. I have named it after Mr. Thomas Kirk, F.L.S., of

Wellington, New Zealand, its discoverer, who, with Mr. Cheeseman, of Auckland, have added more to our knowledge of the New Zealand Flora than any botanists of late years.—J. D. Hooker.

Fig. 1. Flower. 2. Wing. 3. Ovary. 4. Seed. 5 and 6. Embryo. All *enlarged*.

Plate 1333.

ERYTHROSPERMUM POLYANDRUM, *Oliv.*

Bixineæ.

E. polyandrum, *Oliver, sp. n.*, glaberrimum, foliis oblongis v. ovali-oblongis breviter acuminatis basi obtusis subintegerrimis petiolatis, floribus polygamis racemosis racemis terminalibus v. in axillis superioribus approximatis, pedicellis solitariis geminis ternisve basi bracteolatis, staminibus circ. 15 uniseriatis, ovario oblongo-ovoideo superne angustato, stigmate 4-fido.

Hab. Samoa, *Rev. T. Powell.*

Arbor ut videtur glaberrima, ramulis teretibus lævibusque. *Folia* tenuiter coriacea 6–9 poll. longa, 2–3$\frac{1}{3}$ poll. lata; petioli $\frac{1}{2}$–$\frac{3}{4}$ poll. longi. *Racemi* 6 poll. longi pedunculati; pedicelli $\frac{1}{3}$–$\frac{2}{3}$ poll. longi. *Flores* $\frac{1}{2}$ poll. lati; sepala rotundata v. obovato-rotundata concava imbricata petalis paullo breviora; petala obovata inappendiculata. Stamina libera 15–16 glabra, filamentis subulatis crassiusculis, antheris longitudinaliter dehiscentibus oblongis v. lanceolato-oblongis recurvis basi sagittatis, connectivo incrassato. *Ovarium* glabrum; ovula indefinita, placentæ 4.

We have young specimens of probably the same plant from Samoa, sent by Rev. Mr. Whitmee.—D. Oliver.

Fig. 1. Bud. 2. Flower. 3. Stamens. 4. Pistil. 5. Transverse section of ovary.

Plate 1334.

LANIUM MICROPHYLLUM, *Lindl.*

Orchideæ, Tribe Epidendreæ (Stenoglosseæ).

L. microphyllum, *Lindl. MS.*, caulibus brevibus non incrassatis foliosis, foliis distichis angustis carnosis, racemo simplici.—Epidendrum (Lanium) microphyllum, *Lindl. in Hook. Journ. Bot.* iii. 85.

Hab. British Guiana, *Schomburgk.* Surinam, *Hostmann*, n. 626.

Rhizoma v. caudex reptans radicans, vaginis brevibus laxis obtectum. *Caules* absque inflorescentia 1–2-pollicares, carnosuli at non in pseudobulbas incrassati. *Folia* 4–8, alterna, disticha, in vaginis sessilia, recurvo-patentia, crassa, fere 3-quetra, acuta, semipollicaria. *Racemus* terminalis, simplex cum pedunculo 1–2½ poll. longus, tomento minuto pallescens. *Flores* subsecundi, parvuli, viridi-purpurascentes, pedicellis perianthio brevioribus v. paullo longioribus, bractea breviore subtensis. *Perianthii* segmenta ad 2½ lin. longa, patentia; sepalum posticum lineari-lanceolatum subincurvum, lateralia paullo latiora basi columnæ tubo breviter adnata; petala sepalo postico paullo angustiora. *Columna* brevis, marginibus membranaceis cum labelli basi in tubum connatis. *Labelli* lamina sepalis æquilonga, erecto-patens, late lanceolata, concava, acuta, indivisa, basi secus lineam centralem 2-lamellata. *Antherarum* loculi septo transverso 2-locellati. *Pollinia* 4, in locellis antheræ segregata, inferiora longiuscule, superiora brevius, acuminata, apicibus visco perparco connexis.

This, and the species illustrated in the following plate, form a very distinct group of Orchideæ which Lindley had originally intended to establish as a genus, but which he finally (induced probably by the union of the base of the labellum with the column) entered as a section or subgenus of *Epidendrum*. The pollinary apparatus is, however, as observed by Focke, so totally different from that of *Epidendrum* that it was impossible to retain the two species in that genus without doing violence to its character. It is in fact very nearly allied to that of the Liparideæ, but upon the whole the genus seems best placed in our subtribe Stenoglosseæ.—G. Bentham.

Fig. 1. Flower, magnified. 2. Labellum and column (without the anther) seen from above. 3. Anther-case, showing the four locelli. 4. The two pollen-masses of one cell.

Plate 1335.

LANIUM AVICULA, *Lindl.*

Orchideæ, Tribe Epidendreæ (Stenoglosseæ).

L. Avicula, *Lindl. MS.*, caulibus pseudobulbosis apice 2-foliatis, foliis in pseudobulbo sessilibus planis ovatis, panicula ramosa.—*Epidendrum* (*Lanium*) *Avicula*, Lindl. in Hook Journ. Bot. iii. 85.

Hab. Brasil, Organ Mountains, growing in dense tufts on the stems and branches of trees, *Gardner*, *n.* 625.

Caules in pseudobulbum ovoideo-globosum semipollicarem foliis 2 coronatum incrassati, basi squamis 1–2 latis brevibus vaginati.

Folia sessilia ovata, patentia, $\frac{1}{2}$–1-pollicaria, plana, carnosula. *Pedunculus* inter folia terminalis, cum inflorescentia 3–4-pollicaris, in ramos paucos divisus, paniculam laxe pyramidatam formans. *Flores* iis *L. microphylli* similes nisi paullo majores pedicellis sublongioribus; bracteæ minimæ. *Perianthii* segmenta et labellum omnino *L. microphylli*. *Anthera* eadem excepto septo loculos dividente obliquo nec transverso, et polliniorum acumina minus inæqualia, et (saltem in floribus examinatis) libera nec visco connexa.—G. Bentham.

Fig. 1. Flower. magnified. 2. Anther-case with three of the pollen-masses still in it. 3. Two pollen-masses.

Plate 1336.

THESPESIA DANIS, *Oliv.*

Malvaceæ, Tribe Hibisceæ.

T. Danis, *Oliver, sp. nov.* — Frutex v. arbuscula, ramulis ultimis teretibus parce lepidotis, foliis rotundatis integris apice interdum apiculatis basi cordatis v. late truncatis, parce v. præcipue in petiolo lepidotis, pedunculis axillaribus 1 -2 pollicaribus, calyce turbinato-campanulato truncato lepidoto, bracteolis 3 ovato-lanceolatis patentibus, floribus $1\frac{3}{4}$–2 poll. diam., petalis obovato-cuneatis dorso medio lepidotis, ovario 8-loculari, fructu ut videtur baccato v. tarde dehiscente.

Hab. Ribe, Nyika country, East tropical Africa; also in the Galla country, where it is held as 'sacred,' and called 'Dānis.'—*Rev. T. Wakefield.*

Folia $2\frac{1}{2}$–$3\frac{1}{2}$ poll. lata, submembranacea; petiolus $\frac{1}{2}$–$1\frac{1}{2}$ poll. longus. *Bracteolæ* $\frac{1}{3}$–$\frac{3}{4}$ poll. longæ. *Fructus* subglobosus $\frac{2}{3}$–1 poll. diam.

To the same species, I take it, must be referred specimens sent home by Dr. Kirk and Hildebrandt (No. 1929) from the Zanzibar coast. Hildebrandt's specimens are remarkable from their large bracteoles, about 1 inch in length, but they seem to be variable in Mr. Wakefield's specimens. An allied plant, much more lepidote and with broad bracteoles, Dr. Kirk sent from the Somali coast, probably a variety of the same.—D. Oliver.

Fig. 1. Calyx and bracteoles. 2. Anthers. 3. Stigma. 4. Transverse section of ovary.

PLATE 1337.

MICRONYCHIA MADAGASCARIENSIS, *Oliv.*

ANACARDIACEÆ.

Micronychia, *Oliver, gen. nov.*—Flores polygami. Calyx parvus 5-partitus. Petala 5 ovato-oblonga calyce multo longiora, æstivatione imbricata. Stamina (in fl. ♂) 5, petalis alterna, disco hypogyno exteriora. Ovarium glabrum lateraliter compressum, obliquum; stylo ovario æquilongo apice breviter trifido, stigmatibus obtusis; ovulum solitarium prope apicem cavitatis pendulum. Fruct. . . .—*Arbor* v. *frutex*? ramulis ultimis ferrugineo-hirtis, foliis alternis simplicibus petiolatis exstipulatis; paniculis multifloris folio longioribus arcte deflexis ramulis lateralibus alternis patentibus. *Flores* pedicellati penduli.

M. madagascariensis, *Oliv. sp. n. Single species.*

HAB. Tanala, Madagascar, *Langley Kitching.*

Folia ovali- v. oblanceolato-oblonga obtusa v. obtusiuscule acuminata, coriacea, supra glabra subtus in costa et in venulis primariis prominentibus hirtella, $1\frac{1}{2}$–4 poll. longa, $\frac{3}{4}$–$1\frac{1}{3}$ poll. lata; petiolus hirtus $\frac{1}{3}$–1 poll. longus. Paniculæ sessiles ferrugineo-hirtæ, ramulis divaricatis bracteatis, bracteis linearibus appressis; pedicelli dependentes 1–2 lin. longi, bracteolis minutis. *Flores* $\frac{1}{4}$ poll. longi. *Calyx* hirsutus. *Petala* (sicco rubiginosa) dorso minute pubescentia.—D. OLIVER.

Fig. 1. Flower. 2. Same, the petals removed. 3. Anthers. 4. Style and stigmas. 5. Vertical section of ovary.

PLATE 1338.

GAMBLEA CILIATA, *C. B. Clarke.*

ARALIACEÆ, Tribe HEDEREÆ.

Gamblea, *C. B. Clarke in Hook. f. Fl. Brit. Ind.* ii. 739.—Flores polygami, ebracteati. *Calycis* margo brevissimus. *Petala* 5, valvata. *Stamina* 5. *Ovarium* 3–5-loculare; styli 3–5 usque ad dimidiam partem coadunati. *Fructus* globosus, proventu glaber, 3–5-locularis. *Semina* haud compressa; albumen leviter ruminatum, fere ut in *Hedera*.—Arbor 30-pedalis, inermis. *Folia* digitata 5–3-(vel 1-) foliolata; stipulæ intrapetiolares; foliola oblanceolata (solitaria interdum cordata), acuminata, integra supra scabride pilosa, in marginibus argute setoso-ciliata; petioluli rubiginoso-villosi. *Umbelluli* in parvis paniculis dispositi; pedicelli puberuli haud articulati.

Himalaya, alt. 10–12,000 feet, on the ridge dividing Nepaul from Sikkim; from Tonglo to Jongri.

The flowering specimens of this tree which Sir J. D. Hooker collected in 1850 were communicated to Professor Decaisne; but he did not take them up, because without fruit the place of the tree in the Order could not be determined. Examples in fruit have been lately received from J. S. Gamble, Esq., of the Indian Forest Department, and the genus established thereon has been named after him. The tree is plentiful on the ridge dividing Nepaul from Sikkim, in the region of *Rhododendron Falconeri*, but has not yet been communicated from any other locality.—C. B. Clarke.

Fig. 1. Flower, petals removed. 2. Petal. 3. Fruit. 4. Seed. 5. Vertical section of same.

Plate 1339.

AMPHIDOXA GNAPHALODES, *D.C.*

Compositæ, Tribe Gnaphalieæ.

A. gnaphalodes, *DC. Prodr.* vi. 246; *Harvey and Sonder, Flora Capensis,* iii. 263.

Hab. Cape Colony, near Uitenhage, *Ecklon*; Port Elizabeth, *Zeyher*; Natal, *J. M. Wood.*

Herba facies Gnaphalii, decumbens lanata. *Folia* anguste linearispathulata appresse v. tenuiter lanata 1-nervia, sessilia subamplexicaulia, ad $1\frac{1}{2}$ poll. longa. *Capitula* $1\frac{1}{2}$–2 lin. diam. in cymis parvis gracile pedunculatis disposita; involucri squamis interioribus stramineis albidisve obtusiusculis v. subacutis flores superantibus; receptaculum nudum. *Flores* ♀ graciles ore minute 3-dentati; ☿ tubulosi superne parum ampliati 5-dentati; pappi setæ ad 5 caducæ apice tantum barbellatæ. *Antheræ* basi minute papillosæ. *Achænia* oblonga subteretia punctata.—D. Oliver.

Fig. 1. Female flower. 2. Hermaphrodite floret. 3. Anthers. 4. Stigmas.

Plate 1340.

PENTZIA PINNATIFIDA, *Oliv.*

Compositæ, Tribe Anthemideæ.

P. pinnatifida, *Oliver, sp. n.*; caulibus simplicibus e basi lignoso ascendentibus longitudinaliter striatis laxe pilosis, foliis pinnatipartitis,

segmentis utrinque 1–3 anguste linearibus apice subulatim terminatis marginibus plus minus revolutis, corymbis terminalibus polycephalis, capitulis campanulatis pedunculatis, bracteis interioribus lineari-oblongis margine scariosis apice denticulatis basi incrassatis, achæniis longitudinaliter striatis pappo cupuliformi dentato coronatis.

Hab. Inanda, Natal, *Mr. J. M. Wood.*

Caulis $\frac{3}{4}$–$1\frac{1}{4}$ ped., simplices, foliosi. *Folia* sursum gradatim minora alterna v. 2–3-approximata, $\frac{2}{3}$–1 poll. longa, segmentis angustis, primum pilosa. *Capitula* $\frac{1}{4}$ poll. diametro, pedunculata, pedunculis inferioribus longioribus pilosulis tomentosisve, $\frac{1}{2}$–1 poll. longis ; bracteæ inferiores parvæ pinnatisectæ. *Involucrum* bracteis pauciseriatis, arcte appressis ; receptaculum nudum. *Corolla* parce glandulosa, limbo campanulato 5-fido.—D. Oliver.

Fig. 1. Capitulum. 2. Inner scale of involucre. 3. Floret, with enlarged upper portion of ovary. 4. Style and stigmas.

Plate 1341.

COURTOISIA CYPEROIDES, *Nees.*

Cyperaceæ, Tribe Scirpeæ.

C. cyperoides, *Nees in Linnæa,* ix. 286 ; *Boeckel. in Linnæa,* xxxv. 434.

Hab. East India, in marshy wet places in the Peninsula and in Bengal.

Caules cæspitosi, 1–2-pedales, glabri, prope basin foliis 2–3 longis angustis flaccidis instructi. *Inflorescentia* terminalis, umbelliformis, radiis numerosis valde inæqualibus, exterioribus 2–3-pollicaribus umbellulam pleiocephalam ferentibus, intimis brevissimis 1-cephalis, intermediis pluribus. *Bracteæ* 3–4, exteriores sub umbella foliaciæ inæquales, longiores sæpe semipedales, sub umbellulis breves, sub capitulis brevissimæ. *Spiculæ* numerosæ, in capitulis globosis radia umbellæ v. umbellulæ terminantes sessiles, bracteolis parvis subtensæ, singulæ plano-compressæ, cum alis glumarum ovatæ v. demum orbiculares, $1\frac{1}{2}$ lin. diametro. *Glumæ* 2, naviculares, carina dorso latiuscule alata. *Flos* unicus hermaphroditus addito rarius altero parvo imperfecto. *Setæ* hypogynæ 0. *Stamina* 3. *Stylus* cum ovario continuus, basi haud incrassatus, deciduus, ramis stigmatosis 3 filiformibus. *Nux* glumis inclusa quibuscum decidua, oblongo-fusiformis, acute 3-quetra, basi apiceque acuta, erostris.—G. Bentham.

Fig. 1. Spikelet. 2. Flower. 3. Cross-section of the spikelet.

Plate 1342.

ERIOSPORA PILOSA, *Benth.*

Cyperaceæ, Tribe Sclerieæ.

E. pilosa, *Benth. MS.*—Trilepis pilosa, *Boeckel. in Linnæa*, xxxix. 10.

Hab. West tropical Africa. On high rocks where water stands during the rains at Nupe on the Niger, *Butler*, *n.* 1560.

Rhizoma longe repens, vaginis imbricatis foliorum vetustiorum dense obtectum. *Caules* erecti, 3-quetri, 1–2-pedales. *Folia* ad basin caulis conferta, caule breviora, angusta, acuminata, rigidula, secus caulem pauca, breviora, longe vaginata. *Panicula* terminalis, angusta, ramulis irregulariter fasciculatis, superioribus brevissimis, inferioribus in fasciculo sæpe numerosis tenuibus valde inæqualibus, uno alterove sæpe 1–2-pollicari. *Spicularum capitula* (seu spicæ spiculiformes) ovata v. oblonga, ad apicem cujusve ramuli paniculæ solitaria v. sæpius 2–4 conferta, sessilia, 2–3 lin. longa. *Spiculæ* in capitulo numerosæ, androgynæ, undique imbricatæ, minimæ. *Glumæ* paucæ, carinatæ, tenues, subdistichæ, infima vacua, secunda florem fœmineum, 1–2 superiores florem masculum foventes, v. interdum flores omnes masculi. *Stamina* in flore masculo 1–3. *Setæ* hypogynæ normales desunt, sed ovarium floris fœminei basi pilis longis flexuosis dense cinctum. *Ovarium* apice in stylum attenuatum ramis stigmatosis 3.

The very natural and well-defined genus *Eriospora*, proposed by Hochstetter, was well described by Achille Richard in his 'Flora Abyssinica,' except that he considered the female flower and its subtending glume as a separate spikelet, whilst I always find it inserted at the base of the spikelet on the same axis as the two or three upper male flowers, thus clearly indicating its place among true Sclerieæ. Boeckeler associates the original Abyssinian species and the present one with the Brasilian *Fimbristylis* (under the name of *Trilepis*), which belongs to the Cryptangieæ, and describes in 'Flora' 1879, 569, a third species (*E. Schweinfurthiana*), distinct from, but with the habit and main characters of the above two, as a *Carpha*, a genus with which it appears to me not to have the slightest affinity. Schimper's n. 1262, from Abyssinia, appears to be a fourth species, allied to, but distinct from, the original *E. abyssinica*.—G. Bentham.

Fig 1. Spikelet. 2. Outer glume. 3. Inner glume with a male flower. 4. Female flower.

Plate 1343.

CYATHOCHÆTE CLANDESTINA, *Benth.*

Cyperaceæ, Tribe Rhynchosporeæ.

C. clandestina, *Benth. Fl. Austral.* vii. 351.—Carpha clandestina, *R. Br. Prod.* 231.

Hab. West Australia, King George's Sound, *Brown*, *Oldham*.

Caules teretes, erecti, usque ad 7–8 ped. alti. *Folia* ad basin caulis e vaginis distiche imbricatis erecta, pedalia v. longiore, rigida, superne 1 lin. lata, vaginis 2–3-pollicaribus membrana lacera coronatis, pauca secus caulem vagina longa lamina brevi. *Bracteæ* florales secus caulis partem superiorem longe laxeque vaginatæ, lamina parva, superiores gradatim breviores brevius acuminatæ. *Spiculæ* intra quamque bracteam sæpius 2, vix exsertæ v. una longius pedunculata, singulæ fere 2-pollicares, angustæ, vix compressæ, 2-floræ. *Glumæ* sæpius 4, 2 exteriores vacuæ, 2 interiores longiores latiores flores arcte involventes, quorum superior hermaphroditus, inferior masculus v. sterilis. *Setæ* hypogynæ 4, rigidæ, infra medium ciliato-subplumosæ. *Stamina* 2, filamentis pollice glumas excedentibus, antheris linearibus pollicaribus. *Stylus* filiformis, longe exsertus, ramis stigmatosis 2 filiformibus. *Nux* oblonga, styli basi indurata coronata, bene matura tamen adhuc ignota.— G. Bentham

Fig. 1. Bract opened out showing the spikelet. 2. Hermaphrodite flower.

Plate 1344.

RHYNCHOSPORA RUPPIOIDES, *Benth.*

Cyperaceæ, Tribe Rhynchosporeæ.

R. (Eurhynchospora) **ruppioides,** *Benth. sp. nov.*, aquatica, caule foliis bracteisque submersis filiformibus, inflorescentia irregulariter umbellatim composita, spiculis singulis pedicellatis, setis hypogynis 6, styli ramis stigmatosis 2.

Hab. Ceylon, in ponds near Colombo, *Thwaites*; Paraguay, marshes at Caaguaza, *Balansa*, n. 2550.

Caules submersi fasciculatim ramosi, foliis a basi lineari-filiformi longe capillaceis. *Inflorescentia* composita, irregulariter fasciculato-subumbelliformis, radiis umbelluliferis, umbellulis aliis ad fasciculam bractearum longe capilliformium reductis aliis spiculas paucas longe pedicellatas ferentibus. *Spiculæ* angustæ, acuminatæ, 4–6 lin. longæ,

1-floræ. *Glumæ* 3–4, rigidæ, ab extimo brevi ad intimum florentem gradatim auctæ. *Setæ* hypogynæ 6, subæquales, superne retrorsum barbatæ. *Stamina* 3. *Stylus* elongatus, basi incrassatus, ramis stigmatosis 2 papillosis. *Nux* late ovata, compressiuscula, styli basi persistente rostrata.

Although aquatic submerged species have been already described in most of the large widely spread Cyperaceous genera, none had been yet known in *Rhynchospora*, of which the present species has been received at once from Ceylon and from South America without my being enabled to detect the slightest differences between the specimens gathered in these two very distant stations.—G. Bentham.

Fig. 1. Glumes. 2. Young flower within the hypogynous setæ. 3. Flower further advanced, with the setæ developed and the anthers fallen away. 4. Fruit.

Plate 1345.

ARTHROSTYLES APHYLLA, *R. Br.*

Cyperaceæ, Tribe Rhynchosporeæ.

A. aphylla, *R. Br. Prod.* 229.—Fimbristylis planiculmis, *Boeckel. in Linnæa*, xxxviii. 391.

Hab. Tropical Australia, from Endeavour river, *Banks and Solander*, to Croker's island, *A. Cunningham*, and gathered by various collectors in intermediate stations.

Caules e rhizomate brevi plures, cæspitosi, erecti, rigidi, 1–1½-pedales, complanati, aphylli, basi vagina pilosula brevi breviter acuminata stipati, vaginis caulium vetustiorum diu persistentibus dense imbricatis. *Spiculæ* in capitulo terminali depresso-globoso 3–4 lin. diametro numerosæ, sessiles, 1½–2 lin. longæ. *Bracteæ* exteriores involucrantes lanceolato-acuminatæ v. fere subulatæ appressæ, 1–2 capitulo æquilongæ interiores minores gradatim in glumas abeuntes. *Glumæ* cujusve spiculæ 5–7, intima oblongo-lanceolata, acuta, membranacea, obscure 3–5-nervis, florem hermaphroditum fovens, cæteræ gradatim breviores latiores omnes vacuæ v. ex Boeckelero una sub gluma fertili florem masculum fovens. *Setæ* hypogynæ 0. *Stamina* 6, quorum 3 exserta præcocia antheris caducissimis v. interdum deficientibus, 3 breviora inclusa. *Stylus* in ovario articulatus, crassiusculus, uti rami stigmatosi crassi recurvi undique dense pube nivea tomentosa obtectus. *Nux* ovoidea, obtusissima, erostris, albida, lævis v. sub lente minute reticulata.—G. Bentham.

Fig. 1. Spikelet. 2. Flowering glume. 3. Flower. 4. Nut with the style naturally detached at maturity.

Plate 1346.

ACTINOSCHŒNUS FILIFORMIS, *Benth.*

Cyperaceæ, Tribe Rhynchosporeæ.

A. filiformis, *Benth. MS.* Arthrostylis filiformis, *Thwaites, Enum. Pl. Zeyl.* 352.

Hab. Ceylon, *Thwaites, Beckett.*

Caules e rhizomate brevi, plures, cæspitosi, erecti, rigide filiformis, triquetri, 1–3-pedales, aphylli, basi vagina glabra breviter acuminata stipati. *Spiculæ* tenues, in capitulo terminali globoso numerosæ, sessiles, undique radiantes, exteriores reflexæ 2–2½ lin. longæ. *Bracteæ* exteriores paucæ, lineari-subulatæ, sub spiculis fere occultæ. *Glumæ* cujusve spiculæ 4–6, intima v. rarius 2 intimæ florem hermaphroditum foventes, breviter subulato-acuminatæ, acumine sæpe recurvo, exteriores vacuæ gradatim breviores. *Setæ* hypogynæ 0. *Stamina* 3, filamentis sub anthesi brevibus. *Stylus* in ovario articulatus e basi subbulboso-incrassata filiformis, glaber, ramis stigmatosis 3 rarius 2 pariter filiformibus glabrisque. *Nux* ovoideo-globosa, obtuse sub-3-quetra, albida, obscure papillosa, interdum styli basi diu coronata, matura tamen nuda.

In the MS. prepared for the forthcoming part of our 'Genera Plantarum' I have proposed the genus *Actinoschœnus* for three plants hitherto described as species of *Arthrostyles*, and from which Boeckeler had taken his character of that genus. They differ however from Brown's genus (described by Boeckeler as a *Fimbristylis*) in the shape of the capitulum, in the few narrow outer bracts not forming a conspicuous involucre, in the stamens 3 only instead of 6, and in the slender glabrous style. The three species of *Actinoschœnus* closely resemble each other, but come from such different countries that they can scarcely be united as varieties without further evidence. They are: 1. *A. Thouarsii*, Benth. (*Arthrostyles Thouarsii*, Kunth, Enum. Pl. ii. 284), from Madagascar; 2. *A. filiformis*, Benth., as above, from Ceylon; and 3. *A. chinensis* (*Arthrostyles chinensis*, Benth. Fl. Hongk. 398), from Hong-Kong.—G. Bentham.

Fig. 1. Spikelet. 2. Flower. 3. Pistil. 4. Nut with the base of the style not yet fallen off.

Plate 1347.

PTEROSCLERIA LONGIFOLIA, *Griseb.*

Cyperaceæ, Tribe Cryptangieæ.

P. longifolia, *Griseb. Fl. Brit. W. Ind.* 579.

Hab. Trinidad, *Herb. Hook.* North Brasil, in marshy ground, Igarapé Irurá, near Santarem, *Spruce*, *n.* 648.

Caules erecti, simplices, 3-quetri, 1-2-pedales, uti tota planta glabri. *Folia* inferiora caulem sæpe superantia, superiora pauca dissita, 3–6-pollicaria, breviter vaginata, omnia angusta, erecta, acuta, rigidula, subtus prominenter venosa. *Spicularum capitulum* terminale, semipollicem diametro, additis haud raro 1–3 inferioribus paullo minoribus ad axillas foliorum subsessilibus. *Spiculæ* parvæ, in quoque capitulo sæpius numerosæ, omnes sessiles sed irregulariter fasciculatæ, fœminea in quoque fasciculo terminalis, masculis pluribus lateralibus, sed interdum fœminea adest infra masculas (an ad fasciculum distinctum pertinens ?). *Bracteæ* foliaceæ sub capitulo terminali 2 v. 3, patentes, inæquales longiore 1–3-pollicari, interiores concavæ, carina in alam denticulatam sæpius dilatata, recurvo-acuminata, acumine nonnullarum spiculas parum superante, sæpius tamen brevissimo. *Spiculæ* ♂ 2-3-floræ, glumis acutis carinatis exalatis, 1 rarius 2 exterioribus vacuis. *Stamina* 1-2. *Spiculæ* ♀ 1-floræ, glumis sæpius 3. *Setæ hypogynæ* 0. *Stylus* filiformis, ramis stigmatosis 3. *Nux* 3-costata, erostris, disco hypogyno parum prominulo.

The genus *Pteroscleria* now comprises three species, differing but little from each other except in stature and length of leaves. The original *P. guianensis*, Nees, only known from Parker's specimens from British Guiana, has the leaves from $\frac{1}{2}$–$\frac{3}{4}$ of a *foot* (not of an *inch* as stated by Nees, evidently through a clerical error). The third species, *P. capitata*, Benth., is the *Scleria capitata*, Willd., described by Boeckeler in Linnæa, xxxviii. 435 as a *Diplacrum*, in which the leaves are only 2 or 3 inches long and often obtuse, and the heads of spikelets small. Besides the original specimen from Cumana which I only know from descriptions, I should refer to it Spruce's n. 3763 from the inundated sandy banks of the Guiania river.—G. Bentham.

Fig. 1. Female spikelet. 2. Male spikelet with the subtending bract. 3. Bract. 4. Pistil.

Plate 1348.

TRIANOPTILES CAPENSIS, *Fenzl*.

Cyperaceæ, Tribe Rhynchosporeæ.

T. capensis, *Fenzl in Endl. Gen. Pl.* 113.—Ecklonia capensis, *Steud. in Flora* 1829, 138; *Boeckel. in Linnæa*, xxxviii. 229.

Hab. South Africa, Table Mountain, near Cape Town, *Ecklon, Harvey.*

Caules cæspitosi, 3–4-pollicares. *Folia* ad basin caulis graminea, caulem æquantia v. breviora. *Spiculæ* plures, sessiles, fasciculatæ, in

spicam angustam breviter oblongam terminalem densam v. laxam rarius ultra semipollicarem confertæ, sæpius 2-floræ. *Bracteæ* inferiores 1–3, foliaceæ, spicam sæpius superantes, interiores parvæ. *Glumæ* 4–5, imbricatæ, quarum 1–2 inferiores breviores vacuæ, et interdum summa parva vacua. *Flos* uterque hermaphroditus, inferior tamen sæpius sterilis. *Squamæ hypogynæ* 3, angustæ, complanatæ, basi plumoso-ciliatæ, superne glabræ, 3-fidæ, lobis linearibus erectis medio lateralibus longiore. *Stamina* 3. *Stylus* basi incrassatus, pubescens, persistens, superne glaber, filiformis, deciduus, ramis stigmatosis 3. *Nux* obovoidea, triquetra, styli basi persistentis rostrata.

Steudel's original name of *Ecklonia* was changed by Fenzl into *Trianoptiles*, as having been preoccupied in Algæ.—G. Bentham.

Fig. 1. Spikelet. 2. Flower. 3. Hypogynous scale. 4. Nut with the style not yet fallen off.

Plate 1349.

A. VERNONIA STENOCEPHALA, *Oliv.*

B. VERNONIA NYASSÆ, *Oliv.*

Compositæ, Tribe Vernonieæ.

V. stenocephala, *Oliver, sp. nov.* Frutex ramulis gracilibus striatis puberulo-tomentellis, foliis anguste linearibus subsessilibus adscendentibus minute canescenti-hirtellis deinde supra glabratis marginibus arcte revolutis, capitulis 5–7-floris ovalibus cymosis breviter pedunculatis v. subsessilibus in paniculis oblongis terminalibus dispositis, involucro piloso-tomentoso squamis inæqualibus pluriseriatis appressis interioribus lineari-lanceolatis obtusiusculis mucronulatis apice purpurascentibus, corolla superne leviter dilatata pappi setis exterioribus brevibus complanatis interioribus gracilibus breviter plumosis, ovario sericeo-hirtello.

Hab. Lower plateau, north of Lake Nyassa, *Mr. Thomson.*

Rami ut videtur stricti parce ramosi. *Folia* 1–1$\frac{1}{4}$ poll. longa, lineam lata, costa subtus minute pubescente. *Capitula* $\frac{1}{3}$–$\frac{1}{2}$ poll. longa; squamæ involucri exteriores multo breviores ovato v. ovali-oblongæ obtusiusculæ plus minus mucronulatæ.

Ripe achenes I have not seen.

Fig. 1. Capitulum. 2. Corolla. 3. Ovary and pappus.

V. Nyassæ, *Oliver, sp. nov.*, acaulis, foliis radicalibus oblanceolatis acutiusculis v. obtusis pilosulis supra scabride hirsutis petiolo piloso, scapo monocephalo piloso foliis 2–3-plo longiore, capitulo multifloro, involucri squamis 2–3-seriatis lanceolatis acuminatis pilosis, exterioribus brevioribus subulatis laxe appressis, corollæ segmentis linearibus patentibus, ovario pilis subappressis hirsuto, pappi setis barbatis exterioribus multo brevioribus.

Hab. Higher plateau, north of Lake Nyassa, *Mr. Thomson.*

Folia $\frac{3}{4}$–2 poll. longa, 3–5 lin. lata. *Scapus* 2–3 poll. longus. *Capitulum* poll. diametro, floribus involucrum superantibus—D. Oliver.

Fig. 1. Corolla, detached. 2. Ovary and pappus.

Plate 1350.

ACACIA HUNTERI, *Oliv.*

Leguminosæ, Suborder Mimoseæ.

A. Hunteri, *Oliver, sp. nov.*—Glabrata, pallida ; aculeis ternis rectis v. curvulis, foliis parvis, pinnis 2–3-jugis ; foliolis latiuscule oblongis obtusis v. interdum obscure mucronulatis basi oblique subcordatis glabris, rhachide puberula, floribus spicatis sessilibus, spicis breviter pedunculatis, calyce campanulato puberulo, petalis oblanceolatis mucronulatis, legumine oblongo stipitato valvis obtusis mucronatis transverse venulosis puberulis.

Hab. Neighbourhood of Aden, *F. Hunter.*

Folia $\frac{1}{3}$–$\frac{1}{2}$ poll. longa, rhachide puberula ; foliola ad 1 lin. longa. *Inflorescentia* cum pedunculo $\frac{1}{2}$–$\frac{3}{4}$ poll. longa. *Legumen* $\frac{3}{4}$–$1\frac{1}{4}$ poll. longa, $\frac{1}{3}$ poll. lata, 1–3-sperma.—D. Oliver.

Fig. 1. Leaflet. 2. Bud. 3. Petal. 4. Expanded flower and separate anther. 5. Legume laid open. with a single funiculate seed remaining: excepting the last, enlarged.

ICONES PLANTARUM.

Plate 1351.

TECOMA NYASSÆ, *Oliv.*

BIGNONIACEÆ.

T. Nyassæ, *Oliver, sp. nov.* Aff. *T. capensi*, differt: foliolis sæpius obtusioribus, calyce 2–3-plo longiore 5-fido, lobis ovato-lanceolatis acutatis acuminatisve.

HAB. Lower plateau, North of Lake Nyassa, E. Tropical Africa, *Mr. Thomson.*

Ramuli puberuli glabrescentes. *Foliola* lateralia 2–3-juga breviter petiolulata late elliptica v. ovato-elliptica obtusa apicem versus crenato-serrata subtus ad venarum axillas sæpe villosula, terminalia basi rotundata $1\frac{1}{3}$–$1\frac{3}{4}$ poll. longa. *Inflorescentia* racemosa longe pedunculata folia superantia; pedunculus semi-pedalis minute puberulus teretiusculus; bracteæ lineari-subulatæ caducæ; pedicelli $\frac{1}{2}$-poll. longi medio bibracteolati, bracteolis subulatis. *Calyx* tubuloso-infundibuliformis puberulus $\frac{1}{2}$–$\frac{3}{4}$ poll. longus 5-lobatus, lobis tubo brevioribus oblongo- v. ovato-lanceolatis apice plus minus acuminatis curvulis. *Corolla* calyce 3-plo longiora longe tubuloso-infundibuliformis incurva, limbo bilabiato lobis late ovatis ovato-rotundatisve obtusis. *Stamina* exserta.—D. OLIVER.

Fig. 1. Flower. 2. Anther, front and back.

Plate 1352.

BEGONIELLA KALBREYERI, *Oliv.*

Begoniaceæ.

B. Kalbreyeri, *Oliver*, *sp. nov.* Papilloso-setigera, perianthio duplici exteriore campanulato undulato-4-lobulato interiore genitalia æquante campanulato hyalino-membranaceo, staminibus 4 erectis filamentis brevissimis a basi subliberis.

Hab. Antioquia, *Mr. Kalbreyer*.

Caulis 6–15 poll. erecti papilloso-hirsuti. *Folia* oblique ovato-elliptica acuminata plus minus grosse serrata utrinque papilloso-setulosa, breviter petiolata, 2–3 poll. longa; stipulis lineari-lanceolatis petiolo sublongioribus. *Flores* axillares pedunculati, pedunculis folio brevioribus sæpius 1-2–4-floris, bracteis ovato-oblongis v. lanceolatis. *Perianthium* exterius ore late 4-lobulatum, extus setulosum $\frac{1}{2}$-poll. longum; p. interius breve campanulatum membranaceum. *Antheræ* lineares apicem versus paullo latiores.

This plant at first sight, in habit, form and size of leaves, indumentum and form of the flowers, closely resembles my *B. Whitei*, described and figured in 'Trans. Linnean Society,' v. xxviii. p. 513, pl. 41. It differs in the few bracts of the peduncles, which are numerous and distichous in *B. Whitei*, and, much more notably, in the presence of a short inner perianth (corolla), about or nearly equalling the stamens in the ♂ and the branches of the stigma in the ♀ flower, also in the form and insertion of the anthers, which in the new plant are very slightly dilated above (not obovate-cuneate as in *B. Whitei*) and erect from their insertion (in *B. Whitei* distinctly monadelphous, the anthers diverging in two pairs). These differences compel a little expansion of the generic character.—D. Oliver.

Fig. 1. Staminate flower. 2. Same, calyx laid open. 3. Stamens, the corolla laid open. 4. Anther. 5. Pistillate flower. 6. Transverse section of ovary.

Plate 1353.

PHYLLOBOTRYUM SPATHULATUM, *Muell. Arg.*

Bixaceæ.

P. spathulatum, Muell. Arg.; DC. Prod. xv. pt. 2, p. 1232.

Hab. Sierra del Crystal, *G. Mann.* Munda, Gaboon, *H. Soyaux* (descr. ex. spp. Gaboonensibus).

Arbuscula 10-pedalis. *Folia* elongata oblanceolata acuminata basi angustata v. obtusiuscula. $1\frac{1}{4}$–$1\frac{3}{4}$ ped. longa. *Flores* polygami masculi

et hermaphroditi, pedicellati, in costa primaria fasciculati: fl. ♀, petalis 4 (?), oblongo-obovatis calyce 2–3 plo. longioribus; ovario libero ovoideo-conico 1-loculare, placentis tribus multiovulatis; styli 3 liberi divergentes; fl. ♂ trimeri, staminibus circ. 15–18, filamentis gracilibus, antheris deltoideo-ovatis.

For the specimen figured of this singular plant we are indebted to the courtesy of M. Soyaux and Dr. Ascherson, adding to our previous imperfect knowledge of it as published by Mueller, and confirming M. Baillon's view as to its affinity ('Bull. Soc. Linn., Paris,' 1881, p. 287). I cannot, however, regard M. Soyaux's plant as distinct from Mann's, as I see M. Baillon does, proposing to call it *P. Soyauxianum* (l. c. p. 288). A detached fruit sent me a few weeks ago by Dr. Ascherson, already dehisced loculicidally in three valves from the apex downwards, may be $\frac{1}{2}$ to $\frac{2}{3}$ in. in diameter, the pericarp minutely rugulose-tubercled, and containing some four albuminous seeds with a straight embryo about $\frac{1}{6}$th in. in length, the radicle as long as or longer than the ovate cotyledons.—D. Oliver.

Fig. 1. Male flower. 2. Hermaphrodite flower. 3. Stamen. 4. Transverse section of ovary.

Plate 1354.

INDIGOFERA TRACHYPHYLLA, *Benth.*

Leguminosæ, Suborder Papilionaceæ.

I. (*Euindigofera*, § *Simplicifolia*) **trachyphylla**, *Benth.* MS Frutescens, ramosa, hirsuta, foliis lineari-lanceolatis oblongisve apice obtusiusculis mucronatis brevissime petiolatis margine sæpe angusto revolutis utrinque setulis subappressis scabridis, stipulis acicularibus 2–3-lin. longis, pedunculis axillaribus folio subæquilongis erectis, floribus capitatis pedicellatis, pedicellis bractea subulata brevioribus, calyce strigoso profunde 5-fido lobis acuminatis, corolla exserta, ovario 2-ovulato setoso.

Hab. Shiré Highlands, Zambesia, *J. Buchanan!*

Suffrutex $\frac{3}{4}$–2-pedalis ramosus, ramis adscendentibus setis inæquilongis hirsutis. *Folia* $1\frac{1}{4}$–$2\frac{1}{2}$ poll. longa $\frac{1}{3}$–$\frac{1}{3}$ poll. lata. *Inflorescentia* ovoidea v. subglobosa capitata. *Flores* 2-lin. longi; vexillum obovato-rotundatum extus strigulosum; carina utrinque calcarata vexillo subæquilonga; alæ oblanceolato-oblongæ carina breviores. *Ovarium* longe setosum, stylo superne glabro.—D. Oliver.

Fig. 1. Flower. 2. Vexillum, within. 3. Ala. 4. Carina, lateral view. 5 Calyx and stamens. 6. Stamens. 7. Anther. 8. Young fruit. 9. Same, open.

Plate 1355.

DIPLORHYNCHUS MOSSAMBICENSIS, *Benth.*

Apocynaceæ.

D. Mossambicensis, *Benth. sp. nov.* Arbor, ramulis ultimis teretibus puberulis, foliis ellipticis breviter obtuse acuminatis basi sæpius rotundatis longiuscule petiolatis glabratis, paniculis tomentellis terminalibus subsessilibus foliis brevioribus, floribus breviter pedicellatis, folliculis lignosis rugosis 4-spermis.

Hab. Shiré Highlands, Zambesia, *J. Buchanan.*

Folia late elliptica submembranacea $2\frac{1}{4}$–$3\frac{1}{2}$ poll. longa, $1\frac{1}{4}$–2 poll. lata; petiolus $\frac{1}{2}$–$\frac{3}{4}$ poll. longus. *Flores* (alabastro) $\frac{1}{4}$ poll. longi; pedicelli tomentelli calyce superne extus glabrato longiores. *Calyx* 5-fidus, lobis ovatis ciliolatis. *Corolla* fere glabra, lobis tubo æquilongis. *Folliculi* 2-poll. longi $\frac{3}{4}$–1 poll. lati; semina alata funiculata 2 prope basin 2 sub apice peltatim affixa, ala inclusa $1\frac{1}{2}$ poll. longa.

Called *Mtomoni* by the natives; a large tree abounding, Mr. Buchanan says, in 'a white juice possessing a good deal of the quality of India Rubber.' Very nearly allied to *Diplorhynchus psilopus*, Welwitsch MSS. (No. 5982 of his *Iter Angolense*), in which, however, the leaves are much more gradually, or more cuneately, narrowed into their long petioles.—D. Oliver.

Fig. 1. Bud. 2. Flower. 3. Corolla, laid open. 4. Anthers, back, front and side views. 5. Pistil. 6. Ovary, transverse section. 7. Follicle. 8. Same, open, one valve removed. 9. Seed.

Plate 1356.

RANDIA BUCHANANII, *Oliv.*

Rubiaceæ, Tribe Gardenieæ.

R. Buchananii, *Oliver, sp. nov.* Glabra, ramulis teretibus, foliis ellipticis v. obovato-ellipticis late et obtusiuscule acuminatis basi sæpe cuneatis, petiolatis, floribus erectis solitariis terminalibus breve pedunculatis, calyce truncato breviter 5-dentato, corolla tubo appresse piloso infundibulari-campanulato basi in tubo cylindrico calyce longiore angustato, limbo 5-lobo, lobis patentibus late ovatis, fructu globoso pericarpio tenui, endocarpio osseo.

Hab. Shiré Highlands, Zambesia, *J. Buchanan.*

Folia membranacea glabra, $3\frac{1}{2}$–4 poll. longa, $1\frac{1}{2}$–2 poll. lata; petiolus

$\frac{1}{4}$ poll. longus; stipulæ breves late deltoideæ persistentes. *Flores* $2\frac{1}{2}$–3 poll. longi; pedunculi $\frac{1}{4}$ poll. longi, bracteæ breves ovato-deltoideæ ciliolatæ. *Calyx* $\frac{1}{2}$ poll. longus, basi angustatus cylindricus corollæ brevior. *Corolla* limbo $2\frac{1}{2}$ poll. lato. *Fructus* subglobosus sublævis bilocularis polyspermus $1\frac{1}{2}$ poll. diametro.—D. Oliver.

Fig. 1. Anther, back and front. 2. Fruit. 3. Same, open.

Plate 1357.

BURMANNIA KALBREYERI, *Oliv.*

Burmanniaceæ.

B. Kalbreyeri, *Oliver, sp. nov.* Perennis, caulibus adscendentibus foliosis basi foliis marcescentibus vestitis, foliis gramineis linearibus acuminatis nervosis, cymis multifloris a basi umbellatim 3–5-partitis, floribus erectis longe pedicellatis, bracteis majusculis herbaceis, ovario triquetro vix v. hand alato, seminibus inappendiculatis.

Hab. S. José, Prov. Antioquia, *Mr. Kalbreyer.*

Herba subpedalis, caulibus basi plus minus decumbentibus. *Folia* inferiora 4–7 poll. longa $\frac{1}{5}$–$\frac{1}{4}$ poll. lata; superna gradatim minora. *Bracteæ* lanceolatæ acuminatæ $\frac{1}{2}$–$\frac{3}{4}$ poll. longæ. *Flores* semipollicares: perianthii lobis exterioribus violaceis ovatis acutis interioribus brevioribus lineari-lanceolatis albis. *Antheræ* dianetro transversali quam verticali subduplo majores connectivo crassiusculo. *Ovarium* basi angustatum triquetrum. *Semina* $\frac{1}{50}$ poll. longa oblonga v. anguste fusiformia inappendiculata.—D. Oliver.

In *facies* resembles somewhat *B. longifolia*, Beccari, (Malesia, i. t. 13, fig. 1).

Fig. 1. Flower, perianth closed. 2. Part of perianth laid open. 3. Stigma. 4. Transverse section of ovary.

Plate 1358.

PHYSOTRICHIA BUCHANANI, *Benth.*

Umbelliferæ, § Seselineæ.

P. Buchanani, *Benth. sp. nov.* 5–6 pedalis, glabra; caule erecto tereti striato glaucescente, foliis sæpius ad apicem ramorum confertis, petiolo brevi vaginato, bipinnatis, pinnis 1–2-jugis, foliolis sæpius 1–3-

jugis cum impari, lateralibus oblique et late ellipticis mucronulatis, terminalibus obovato-rotundatis sæpe minute 3-dentatis, umbellis pluriradiatis longe pedunculatis, bracteis reflexis anguste ovalibus, fructibus oblongis subteretibus hirtellis, jugis primariis prominulis crassiusculis.

Hab. Top of Mount Zomba, Shiré Highlands, *J. Buchanan*.

Folia radicalia non vidi, caulescentes 5–7 poll. longa et lata; foliolis 1–2 poll. longis $\frac{3}{4}$–$1\frac{1}{2}$ poll. latis, sessilibus v. lateralibus basi oblique angustatis subpetiolulatis. *Umbellæ* compositæ tomentellæ 4–8 poll. diam.; involucri bracteæ $\frac{3}{4}$–$1\frac{1}{2}$ poll. longæ, marginis submembranaceis pallidis, involucellorum bracteæ minores; pedicelli hirtelli fructu longiores. *Petala* obovata apice inflexa. *Fructus* ellipsoideo-oblongus, 2 lin. longus.—D. Oliver.

Fig. 1. Flower. 2. Stamens. 3. Pistil. 4. Fruit. 5. Mericarp, transverse section.

Plate 1359.

BRACHYSTEGIA LONGIFOLIA, *Benth.*

Leguminosæ, Cæsalpinieæ. Tribe Amherstieæ.

B. longifolia, *Benth. sp. nov.*; foliis glabris, foliolis 8–12-jugis oblongo-lanceolatis obtusis sessilibus basi oblique subcordatis, racemis latiuscule paniculatis rufo-puberulis, floribus pedicellatis, ovario stipitato.

Hab. Tropical Africa, Shiré Highlands, Zambesia, *J. Buchanan*. N'Jombo of the natives.

Arbor ligno molli, ramis adultis foliisque glabris, novellis paniculaque pube minuta rufidulis. *Folia* inferiora pedalia; foliola 2–3-pollicaria, 6–9 lin. lata, tenuiter coriacea, nitidula, venulosa, subtus pallida, costa parum excentrica, prope basin tamen distincte inæquilatera, venis 1–2 in latere latiore medium folium interdum attingentibus; ramorum floralium folia foliolaque minora. *Panicula* in ramulis hornotinis brevibus 1–3-foliatis terminales v. in ramo annotino laterales, aphyllæ, ovato-pyramidatæ, laxiusculæ, 2–4-pollicares, floribundæ, ramulis patentibus simplicibus v. 2-fidis. *Bracteæ* parvæ, orbiculatæ, jam ante anthesin caducæ. *Pedicelli* vix semilinea longiores. *Bracteolæ* valvatæ, 3–$3\frac{1}{2}$ lin. longæ. *Sepala* 5, lineari-oblonga, membranacea, ciliata, linea paullo longiora. *Petala* sæpe adsunt 3–4, linearia, tenuissima, sepalis longiora. *Stamina* bracteolis paullo longiora. *Ovarium* distincte stipitatum, oblique obovatum, pilosum, ovulis 6–8. *Legumen* sublignosum, compressum, valde obliquum, 4–5 poll. longum,

medio 2 poll. latum, apice basique angustius, sutura seminifera 2-costata. Semina perfecta sæpius 2, suborbiculata, plana.

I gave a revised generic character and described three species of this tropical African genus in the Linnean 'Transactions,' xxv. 311, t. 42, to these Mr. Buchanan's collections from the Shiré Highlands have added three more, the above *P. longifolia* and the two following, all distinguished from the previously published ones by the looser spreading panicles.

B. floribunda, Benth., foliis glabris, foliolis 3-jugis late oblongis ovatisve obtusis sessilibus basi inæquilateris, racemis latiuscule paniculatis rufo-pubescentibus, floribus pedicellatis, ovario stipitato rufo-villosissimo.—Arbor procera, ligno duro. Foliorum rhachis tenuis, semipedalis; foliola 3–4 poll. longa, 1–2 poll. lata, papyracea, venulosa, costa parum v. distincte excentrica, basi latere latiore sæpe 2–3 nervia. Paniculæ in ramis annotinis fasciculatæ, 2–3-pollicares, a basi dense floribundæ, rufo-pubescentes. Bracteolarum paria in alabastro ovoidea, 2 lin. longa. Sepala *B. longifoliæ*. Petala deesse videntur. Legumen 4–5 poll. longum, a basi ad apicem $1\frac{1}{2}$ poll. latum. Semina 2–4, orbiculata, plana.—The natives distinguish two varieties, one with broader leaflets than the other, but the other characters are quite the same in both.

B. globiflora, Benth., foliis pubescentibus, foliolis 5–7-jugis late oblongis obtusis basi valde inæqualibus, racemis late laxeque paniculatis, pedicellis brevissimis, ovario sessili villoso.—Arbor procera. Foliorum inferiorum rhachis sæpe pedalis, foliolis 3–4 poll. longis $1\frac{1}{2}$ poll. latis, ramorum floralium foliola multo minora et angustiora. Panicula terminalis, foliata, ampla, v. in ramis annotinis paniculæ breves ramis valde divaricatis recurvis. Bracteolarum paria in alabastro globosa, fere 2 lin. diametro. Sepala interdum parum breviora, et petala linearia quam in cæteris speciebus evidentiora. Legumen 2-pollicare, $\frac{3}{4}$ poll. latum.—G. Bentham.

Fig. 1. Flower showing the two bracteoles, three of the sepals, two of the petals, the ten stamens and the pistil. 2. A sepal. 3. A petal. 4. Pistil. 5. Ovary, longitudinal section. 6. Pod. 7. Seed.

Plate 1361.

MICRAIRA SUBULIFOLIA, *F. Muell.*

Gramineæ, Tribe Isachneæ.

M. subulifolia, *F. Muell., Fragm. Phyt. Austral.*, v. 203.

Hab. Queensland, hilly districts, on rocks, sometimes completely covering them in dense masses, *Dallachy* and others.

Gramen humile, perenne, prostratum v. repens, interdum dense cæspitosum, basi ramorum et vaginis foliorum emarcidorum plus minus obtectum. *Folia* in ramulis dense fasciculata, lineari-subulata, rarius semipollicem excedentia, vagina ad os leviter ciliata. *Panicula* terminalis, gracilis, pedunculata, laxe pyramidata, pollice brevior, ramulis pedicellisque capillaribus. *Spiculæ* minimæ, æqualiter 2-floræ, rhachilla supra glumas inferiores articulata, brevissima, ultra flores non producta. *Glumæ* 2 inferiores vacuæ, vix semilinea longiores, sub articulatione persistentes v. demum sigillatim deciduæ, membranaceæ, acutæ, tenuissime venosæ, muticæ, subæquales; florentes 2 vacuis breviores, membranaceæ, latæ, truncatæ, nervis ad 7, fructiferæ cum palea inclusa subhemisphæricæ, non induratæ. *Palea* plurinervis, nervis 2 cæteris evidentioribus. *Stamina* 3? *Styli* breves, distincti, stigmatibus plumosis. *Caryopsis* gluma paleaque inclusa, libera.—G. Bentham.

Fig. 1. Leaf. 2. Spikelet. 3. Flowering glume and palea. 4. Flowering glume, opened out. 5. Palea, opened out. 6. Pistil. 7. Caryopsis.

Plate 1362.

ACIACHNE PULVINATA, *Benth.* ♀.

Gramineæ, Tribe Agrostideæ (*Stipeæ*).

Aciachne, *Benth. gen. nov.*, Char. gen. *Spiculæ* unisexuales, ♂ ignotæ. Spicula ♀ 1-flora, in pedunculo terminali unica, erecta, rhachilla brevissima supra glumas inferiores articulata, ultra florem non producta. *Glumæ* 3, 2 inferiores vacuæ, latæ, tenuiter membranaceæ subhyalinæ et rigidulæ, obtusæ, muticæ, parum inæquales, sub articulatione persistentes; terminalis florens multo longior, rigida, basi lata circa florem convoluta, superne in acumen longum teres rigidum producta; palea brevior, inclusa, hyalina, latiuscula, circa florem convoluta, tenuiter 2-nervis. Lodiculæ parvæ. *Staminodia* 0. *Styli* distincti, stigmatibus plumosis. *Caryopsis* (immatura) oblonga, gluma rigida subindurata inclusa, libera.

A. pulvinata, *Benth. MS.*, single species.

Hab. Andes of South America, Parano Viejo, New Granada, a most annoying weed to walk through, the glumes sticking to the feet, *Purdie*; New Granada, *Goudot*; El Ecuador, abundant near Salinas on marshy ground, forming a dense mass, *Jameson*, n. 157; Aigapata, in Peru, where it forms large masses, *Lechler*, n. 3134, also in Hohenacker's distribution of Lechler's plants under the number 1813, as

from the summit of the Cordilleras near San Antonio, but as the very false name of *Distychia muscoides*, Nees, is given, there may be some error in the label; La Paz, Bolivia, at an elevation of 12,226 feet, *Pentland*; Alpine region, province of Larecaja, Bolivia, at an elevation of 3600 to 4200 metres, *Mandon*, n. 1287.

Gramen perenne, nanum, multicaule, pulvina latissima densissime cæspitosa formans. *Caules* cum foliis 1–3-pollicares, foliorum vaginis imbricatis diu obtecti, basi demum fere denudati. *Folia* densissime conferta, nunc subdisticha nunc quaquaversa, laminis patentibus v. recurvis convoluto-subulatis rigidis sæpe pungentibus raro semipollicem excedentibus; ligula prominens ovata. *Pedunculus* terminalis, rigidus, folia parum excedens v. iis brevior. *Glumæ* vacuæ diu persistentes, $\frac{3}{4}$–1 lin. longæ; florens cum acumine dimidio v. subduplo longior.

Notwithstanding the number of specimens from most of the above localities, I have been unable to detect any but female spikelets, which on some of them are numerous, often past flower, and showing only the persistent outer glumes. The males are probably on distinct plants and most likely with a different inflorescence, rendering it difficult to identify them. If that be the case, it is possible that the male of this, or an allied species, may be represented by Lechler's specimens gathered at Gachapata in Peru, a month earlier than the females above referred to, and distributed with the number 599. In these the leaves are longer, all erect, and very rigid, 1 to 3 in. long. The spikelets are several in a loose, slightly branched, rigid, erect panicle of 1 to 2 inches, the glumes precisely like those of the females, but enclosing three perfect stamens, and the ovary reduced to an ovoid rudiment with two small points.—G. Bentham.

Fig. 1. Seed. 2. Leaf. 3. Spikelet. 4, 5. Lower empty glumes. 6. Ovary and style. 7. Palea, lodicules, and ovary, the styles having fallen off. 8. Flowering glume, almost closed over the palea. 9. Flowering branch from the specimens represented by the lower general figure; the upper general figure represents specimens from the same localities with much finer leaves with narrower sheaths.

Plate 1363 A.

ANTHOCHLOA LEPIDA, *Nees.*

Gramineæ, Tribe Festuceæ (*Meliceæ*).

A. lepida, *Nees in Pl. Meyen.* 164 (lapsu calami *Antochloa*).

Hab. Andes of Peru and Bolivia at an elevation of 14,500 to 15,000 feet, *Meyen*, *Mandon*, n. 1372.

Gramen nanum, dense cæspitosum, caulibus foliorum vaginis ob-

tectis, $\frac{1}{2}$–2 poll. longis. *Folia* anguste linearia, plana, $\frac{1}{2}$–1 poll. longa. *Paniculæ* laxe capituliformes (sæpius densiores quam in icone delineatæ), inter folia terminales, sessiles v. breviter pedunculatæ, folia superiora brevia vix superantes. *Spiculæ* paucifloræ, secus rhachin singulæ v. inferiores 2–3-næ brevissime pedicellatæ, rhachilla inter flores articulata, floribus hermaphroditis. *Glumæ* latæ, hyalino-scariosæ, albæ, muticæ, 2 inferiores vacuæ, inæquales; florentes majores, a basi brevissime cucullata latissime expansæ, fere flabellatæ, petaloideæ $1\frac{1}{2}$ lin. diametro, breviter tenuiterque 5-nerves; 1–2 superiores minores, vacuæ, sub-3-nerves. *Palea* angusta, hyalina, 2–3-fida v. lobo medio diviso fere 4-fida. *Stamina* 3. *Styli* breves, distincti, stigmatibus plumosis. *Caryopsis* immatura ovoidea, intra basin glumæ a palea libera.

This curious little grass with its numerous little heads of white spikelets has almost the aspect of some of the dwarf *Helichrysa*. Our specimens are Bolivian from Mandon, but they agree well with Nees's description of Meyen's Peruvian plant. Remy has published a second Bolivian species gathered by D'Orbigny, but I cannot make out from his description any really distinctive character.—G. Bentham.

Fig. 1. Spikelet enlarged and represented looser than it is at the time of flowering. 2. Outer empty glume. 3. Flowering glume. 4. Palea. 5. Stamens and pistil.

Plate 1363 B.

UROCHLÆNA PUSILLA, *Nees.*

Gramineæ, Tribe Festuceæ (*Sesleriecæ*).

U. pusilla, *Nees, Fl. Afr. Austr. Gram.*, 438.

Hab. South Africa, dry sandy hills near Ebenezer, Clanwilliam district, *Drege*. Not seen in any other collection.

Gramen pumilum, annuum, caulibus tenuibus rigidulis 3–4-pollicaribus. *Folia* angusta, pauca, summum sub inflorescentia spiculas superans, a cæteris distans. *Spiculæ* parvæ, paucifloræ, in panicula capituliformi secunda densissime fasciculatæ, floribus hermaphroditis v. summo masculo; capitulum intra vaginam folii summi floralis subsessile, basi et intra capitulum ad basin ramulorum brevissimorum spiculis nonnullis sterilibus v. glumis vacuis quasi involucratum, fructiferum cum folio florali a geniculo superiore caulis articulatim deciduum. *Glumæ* ovatæ, concavæ, membranaceæ, 5–7-nerves, acuminatæ, acumine in aristam patentem producto; 2 infimæ vacuæ, florentibus paullo minores; superiores iterum paullo minores. *Palea* gluma paullo brevior, hyalina, 2-carinata. *Stamina*. . . *Styli* distincti, stigma-

tibus laxe plumosis. Caryopsis breviter oblonga, glabra, a palea libera.

The manner in which the fruiting inflorescence with its subtending leaf breaks off from the stem or peduncle has not, as far as I am aware, been observed in any other grass. The genus is otherwise, as observed by Nees, allied to *Sesleria*. Drege's specimens are all past flower, so that the stamens are unknown.—G. Bentham.

Fig. 1. Spikelet. 2, 3, 4, 5. Glumes. 6. Palea. 7. Pistil. 8. Caryopsis.

Plate 1364.

YOANIA JAPONICA, *Maxim.*

Orchideæ, Tribe Neottieæ (*Arethuseæ*).

Y. japonica, *Maxim. in Bull. Acad. Sc. Petersb.*, xviii. 68; *Mel. Biol.*, viii. 647.

Hab. Japan, in Alpine woods in middle Nippon, whence Maximowicz received three specimens from his collector, Tschonoski, in 1864.

'*Caulis* crassus, decolor, erectus, spithameus v. pedalis, aphyllus, parte subterranea ramosus, sparse squamatus, villosus, parte epigæa glaber, basi crebre sursum remote vaginis concavis ovatis membranaceis tectus, e quarum superioribus prodeunt flores longe pedunculati, diametro 2-pollicares, in racemum laxum 4–7-florum collecti' (*Maxim.*). *Sepala* carnosa, libera, patentia, oblonga, lateralia, subinæquilatera. *Petala* sepalis paullo breviora, ovata, conniventia. *Labellum* cum petalis campanulato-conniveus, iis æquale, liberum, lata basi sessile, suboblongum, concavum, apice contracto subfornicatum, medio in sacculum breve excavatum, læve. *Columna* labello brevior, erecta, plana, quadrata; stigma transversum, profunde excavatum, rostello obsoleto; clinandrii lobus medius triangulari-ovatus, laterales semiovati, in alas columnam marginantes abeuntes. *Anthera* lobo medio adnata, persistens, longe rostrata; loculorum facies a margine solutæ; pollinia 4, oblonga, pulposa, sectilia, per bina caudiculis (stipitibus rostelli?) arachnoideo-viscidulis glandulæ affixa, quæ quasi semilunaris margini superiori stigmatis inserta.—(*Abridged from Maximowicz*).

Of this curious plant, more nearly allied to *Epipogon* than to any other, I have seen no specimen. The accompanying plate is copied from a drawing obligingly sent to us by Dr. Maximowicz, taken from the above-mentioned specimens. He has also sent a copy of a sketch

of Siebold's, representing a somewhat distinct variety or species with larger flowers.—G. Bentham.

Fig. 1. Peduncle and flower, side view. 2. Flower, partly laid open, showing the shape of the labellum. 3. Details of the flower: s. sepals, p. petals, l. labellum, c. column. 4. Column, the anther-lid turned up. 5 and 6. Pollen masses.

Plate 1365.

NORONHIA BROOMEANA, *Horne.*

Oleaceæ, Tribe Oleineæ.

N. Broomeana, *Horne MSS.* Arbor; foliis anguste v. late ellipticis obovatis v. rotundatis breviter apiculatis basi cuneatis subcoriaceis in axillis venarum subtus tomentellis, paniculis lateralibus plurifloris foliis brevioribus, bracteis parvis ovato-lanceolatis sericeis, pedicellis pubescentibus calyce 4-fido subæquilongis, corolla alba 4-partita, fructu ellipsoideo utrinque angustato 8-costato, endocarpio crustaceo deinde bivalvatim dehiscente, semine exalbuminoso, cotyledonibus crassis carnosis.

Hab. Forests near Grand Bassin, Mauritius, *Mr. J. Horne.*

Arbor 50–70-pedalis, ramulis cinereis, innovationibus puberulo-sericeis. *Folia* 3–5 poll. longa $1\frac{1}{2}$–5 poll. lata, subtus pallidiora. *Paniculæ* e basi ramulis hornotinis $1\frac{1}{2}$–3 poll. longæ, leviter pubescentes. *Calyx* 4-fidus, lobis ovato-deltoideis. *Corolla* glabra, lobis $\frac{1}{4}$ poll. longis 1 lin. latis. *Fructus* drupaceus 1–2 poll. longus, medio $\frac{1}{2}$–1 poll. diam.

Mr. Horne says this fine tree is known in the island as the 'Sandal,' and that he has only seen it in the locality cited, where it is not uncommon.—D. Oliver.

Fig. 1. Flower. 2. Corolla laid open. 3. Stamen. 4. Calyx and ovary. 5. Longitudinal section of ovary. 6. Fruit. 7. Embryo.

Plate 1366. Fig. A.

VERONICA CHEESEMANI, *Benth.*

Scrophularineæ, Tribe Digitaleæ.

V. Cheesemani; perpusilla, cæspitosa, ramosissima, cano-pubescens, ramis gracilibus intricatis, foliis petiolatis cuneato-obovatis grosse obtuse dentatis lobulatisve, floribus axillaribus solitariis subsessilibus, calycis segmentis cuneato-spathulatis apices obtusos versus crenatis,

corollæ segmentis obovatis retusis, ovario late ovoideo hispidulo.—V. Cheesemani, *Benth. MSS.*

Hab. New Zealand; Nelson, on the Raglan Mountains, Wairau Valley, alt. 5000 ft., *T. F. Cheeseman.*

Cæspites 2–3 poll. diametro; radice gracili elongato, ramis perplurimis filiformibus dense intertextis. *Folia* patentia, $\frac{1}{2}$–$\frac{1}{10}$ poll. longa, in petiolum angustata, utrinque puberula; petiolo laminæ æquilongo. *Flores* inconspicui, albi, $\frac{1}{10}$ poll. diametro. *Calycis* segmenta corolla paullo breviora, recurva. *Capsula* sepalis brevior, subdidymo-globosa, compressa, hispidula, matura ad basin 4-valvis; semina minuta, plano-convexa, fere ellipsoidea, testa granulata.

A very singular little species with the habit of a small *Euphrasia*, belonging to a section of the genus with solitary axillary flowers, of which only one species (*V. canescens*, T. Kirk in 'Trans. New Zeal. Inst.' v. ix. pp. 503 to 519) had previously been discovered in New Zealand. This latter differs in being still smaller, with procumbent stem, almost orbicular entire leaves, and peduncled pale blue flowers, which are large for the size of the plant; it has elliptic acute calyx-segments; its fruit is unknown. The capsule of *V. Cheesemani*, represented at fig. 6, is much narrower and less didymous than in specimens examined by me.—J. D. Hooker.

Fig. 1. Leaf. 2. Flower. 3. Calyx. 4. Stamens. 5. Ovary. 6. Capsule, *all enlarged.*

Plate 1366. Fig. B.

PORANTHERA ALPINA, *Cheesem.*

Euphorbiaceæ, Tribe Stenolobieæ.

P. alpina, herba pusilla, intricatim ramosissima, glaberrima, ramulis ascendentibus foliosis, foliis parvis subimbricatis erecto-patentibus sessilibus lineari-oblongis obtusis coriaceis marginibus fere ad costam crassam recurvis, floribus ad apices ramulorum subfasciculatis, pedunculis foliis brevioribus superne incrassatis, sepalis 5 oblongis obtusis, petalis 0.—P. alpina, *Cheesem. MSS.*

Hab. New Zealand; Nelson Province, Port Arthur, alt. 4–500 to 5–800 ft. *T. F. Cheeseman.* H. Jay.

Herba 3–5-uncialis, ramis ramulisque flexuosis intertextis teretibus, articulatis, cortice rufo-fusco. *Folia* $\frac{1}{6}$ poll. longa, opposita et subopposita, crassiuscula, lævia, superne convexa, enervia; costa subtus crassissima; stipulæ minutæ, latæ, obtusæ, castaneæ, oppressæ. *Flores* $\frac{1}{2}$ poll. diam. in axillis supremis, flavescentes, pedicello perianthio

paullo longiore. *Sepala* patula v. incurva. *Stamina* sepalis paullo breviora, filamentis gracilibus; antheræ 4-lobæ, poris verticalibus. Ovarium subglobosum, alte 3-lobum, stigmatibus brevibus 2-fidis.—J. D. Hooker.

Fig. 1. Male flower. 2. Anthers. 3. Female flower. 4. Ovary. 5. Transverse section of do. 6. Vertical section of carpel, *all enlarged.*

Plate 1367.

RHANTERIUM EPAPPOSUM, *Oliv.*

Compositæ, Tribe Inuloideæ.

R. epapposum, *Oliver, sp. nov.* Suffrutex incanus ramosissimus; ramulis intricatis gracilibus, foliis remotis paucisque linearibus v. anguste ovalibus remote dentatis integrisve parce lanatis v. glabratis carnosulis, capitulis solitariis terminalibus pedunculatis, involucro hemisphærico, bracteis lanceolatis acutis glabratis subsquarrosis, receptaculo paleaceo, floribus ♀ anguste ligulatis, ligula marginibus incurvis apice 3-dentata, ovario glabro epapposo.

Hab. Coast of Beloochistan, *Mr. E. Pierce.*

Folia $\frac{1}{3}$–1 poll. longa. *Capitula* $\frac{1}{3}$–$\frac{1}{2}$ poll. lata; bracteis pluriseriatis coriaceis exterioribus minoribus. *Receptaculum* paleis coriaceis lanceolatis acuminatis marginibus interdum laciniatis. *Achænia* non vidi.

This plant has very much the aspect of *R. suaveolens*, Desf. (Kralik, Pl. Tunet. 246), though with less rigidly recurved scales of the involucre. We have what I take to be the same plant in the Kew Herbarium from Central Arabia, communicated by Col. Pelly in 1865, who described it as branching from the ground in bushes '$1\frac{1}{2}$ ft. high, and from 2 to 5 ft. in circumference, and, where abundant, from 3 to 6 ft. apart.'—D. Oliver.

Fig. 1. Capitulum. 2. Ray-floret and subtending scale. 3. Disk-floret and scale. 4. Anther (the tails are connate in pairs). 5. Stigma.

Plate 1368.

ERAGROSTIS CŒLACHYRUM, *Benth.*

Gramineæ, Tribe Festuceæ (*Eragrostideæ*).

E. (Plagiostachya) **Cœlachyrum**, *Benth.*, annua, humilis, foliis brevibus latiusculis, spiculis subdistiche spicatis 3–4-floris glabris, spicis

ad apicem pedunculi 3–4 brevibus confertis, glumis obtusis, caryopsi suborbiculata a dorso compressa valde rugosa antice concava. *Eleusine brevifolia*, Hochst. et Stend. Pl. Schimp. exs. n. 799 non R. Br. *Cælachyrum brevifolium*, Nees in Linnæa, xvi. 221.

Hab. Sandy shores of the Red Sea, near Djedda, *Schimper*, *S. Fischer*, *n.* 133; between Kosseir and Ras-Benass, *Schweinfurth*, *n.* 1577.

Gramen annuum, cum pedunculo vix 3-pollicare, basi pluricaule, caulibus lateralibus prostratis v. ascendentibus, medio erecto, undique glabrum. *Folia* ad basin caulis plura, in caule florido 1 v. 2, supra vaginam sessilia, plana, acuta, $\frac{1}{2}$–1 poll. longa, $1\frac{1}{2}$-2 lin. lata, ligula parva nunc vix prominente. *Pedunculus* supra folium summum 1–$1\frac{1}{2}$ poll. longum. *Spicæ* ad apicem pedunculi arcte approximatæ, v. inferiores parum distantes, singulæ 3–4 lin. longæ. *Spiculæ* in quaque spica 8–12, subsessiles, 1-$1\frac{1}{4}$ lin. longæ, compressæ at non planæ. *Glumæ* obtusissimæ, laxe imbricatæ, tenuiter membranaceæ, nervis 3 prominentibus. *Caryopsis* gluma paleaque laxe inclusa, libera, late ovata v. orbiculata, a dorso compressa, insiguiter rugosa, media facie foveola lata excavata.

Allied to this species is an East Indian Peninsular plant, *Dactylis brevifolia*, Roem., confounded by Steudel and others with the *Æluropus repens*, and placed by Kunth in *Poa* (but not the *Æluropus lævis*, Trin.), by Sprengel in *Koeleria*, and by R. Brown in Wallich's Catalogue in *Eleusine*. It has, however, all the characters of *Eragrostis*, and may take the name of *E. brevifolia*. It is sometimes quite dwarf, with the aspect of *E. Cælachyrum*, but is generally much more robust and branched, never, however, with the peculiar rigid creeping habit of *Æluropus*. The leaves are quite those of *E. Cælachyrum*, but the spikelets are larger and flatter, with 6 to 12 flowers and hairy glumes, and collected into a dense, almost globular head of about $\frac{1}{3}$ in. diameter. *Æluropus* is readily distinguished by the many-nerved glumes as well as by habit.—G. Bentham.

Fig. 1. Spikelets. 2, 3. Lower empty glumes. 4. Flowering glume, side view. 5. The same, open, with the margins turned in. 6. Palea, lodicules, and caryopsis. 7. Stamens and pistil. 8. Caryopsis, back view. 9. The same, front view.

Plate 1369.

NEPHELOCHLOA ORIENTALIS, *Boiss.*

Gramineæ, Tribe Festuceæ (*Eufestuceæ*).

N. orientalis, *Boiss. Diagn. Pl. Or.* v. 73.

Hab. Levant, province of Caria near Gheyra, *Boissier*, and in Phrygia, near Ouchak, *Balansa*.

Gramen annuum, erectum, tenue. *Folia* pauca, anguste linearia, siccitate convoluta, 1–2 poll. longa; ligula fimbriato-lacera. *Panicula* fere *Airæ involucratæ*, Cav., oblonga, laxa, 3–6-pollicaris, ramis numerosis verticillatis erecto-patentibus capillaribus parce ramulosis, verticillorum inferiorum sæpe sterilibus; pedicelli capillares, spicula sæpius longiores. *Spiculæ* 5–6-floræ, compressæ, distichæ, pilosulæ, bene evolutæ fere 3 lin. longæ, in pluribus speciminibus minores, rhachilla glabra, floribus hermaphroditis. *Glumæ* 2 inferiores vacuæ sub articulatione persistentes, membranaceo-hyalinæ, vix venosæ, obtusæ, muticæ, secunda infima paullo longior, quam florentes paullo brevior; florentes vix carinatæ, basi 5- rarius 7-nerves, apice scariosæ, 2-fidæ, arista inter lobos tenui recta lobis longiore. *Palea* hyalina, 2-dentata, 2-carinata. *Lodiculæ* inconspicuæ. *Stamina* 3. *Styli* brevissimi, stigmatibus brevibus plumosis. *Caryopsis* adhuc immatura a palea libera.

This elegant grass is the only one known of the genus, for the Asiatic species added to it by Grisebach by no means agree with Boissier's character, and should more properly be restored to *Poa*, in which genus they were originally published.—G. Bentham.

Fig. 1. Spikelet. 2. Lowest empty glume. 3. Second empty glume. 4. Flowering glume. 5. Palea. 6. Flowering glume. side view. 7. Stamens and pistil.

Plate 1370.

ERAGROSTIS PIERCII, *Benth.*

Gramineæ, Tribe Festuceæ (*Eragrostideæ*),

E. (Platystachya) **Piercii**, *Benth. sp. nov.*, caulibus elongatis laxis, spiculis secus ramos tenues simplices paniculæ laxæ pedicellatis planis ovatis 8–16-floris, rhachilla articulata, glumis obtusis v. rarius mucronatis glabris, caryopsi lævi.

Hab. Coast of Beluchistan, *O. Pierce.*

Gramen ut videtur perenne, glabrum. *Caules* basi conferti crassiusculique, decumbentes v. laxe ascendentes, cum inflorescentia 1½-pedales longioresque, in parte inferiore foliati interdumque ramosi. *Folia* plana, subulato-acuminata, 1–2-pollicaria v. rarius longiora. *Panicula* longe pedunculata, tenuis, laxa, ramis 3–7 fere filiformibus dissitis v. superioribus subgeminis, inferioribus interdum semipedalibus, superioribus brevioribus. *Spiculæ* secus ramulos distantes, pedicello brevi sæpe capillari fultæ, bene evolutæ 3 lin. longæ, 2 lin. latæ. *Glumæ* complicatæ, distiche imbricatæ, inferiores linea paullo longiores interdum etsi rarius mucronatæ, 2 infimæ vacuæ sed florentibus similes

post fructus delapsos persistentes, superiores gradatim minores obtusæ. *Caryopsis* oblonga, compressiuscula, lævis.—G. Bentham.

Fig. 1. Spikelet. 2, 3. Glumes, side view. 4. Glume laid open. 5. Palea. 6. Stamen. 7. Pistil and lodicules. 8. Caryopsis.

Plate 1371.

ERAGROSTIS SCHIMPERI, *Benth.*

Gramineæ, Tribe Festuceæ (*Eragrostideæ*).

E. (Plagiostachya) **Schimperi**, *Benth.*, erecta foliis angustis longiusculis, spica v. racemo terminali simplici, spiculis brevissime pedicellatis longiusculis 8–10-floris, glumis dissitis angustis acutis, caryopsi lævi. *Harpachne Schimperi*, Hochst. in A. Rich. Fl. Abyss. ii. 431 et in Flora 1855, 331.

Hab. Near Adoa, Abyssinia, *Schimper*, *n.* 171, *Rohr.*

Gramen forte annuum, caules tamen dense cæspitosi ½–1-pedales. *Folia* angusta, nunc semipedalia nunc multo minora, ad basin laminæ sæpius ciliata, pleraque ad basin caulis conferta, secus caulem pauca. *Pedunculus* supra folium supremum brevis v. elongatus. *Spica* laxa, 1–3-pollicaris, in speciminibus nostris secunda, sed ex Hochstettero sæpe quaquaversa. *Spiculæ* perfectæ semipollicares, pedicello ½-lin. longo fultæ. *Glumæ* 2 inferiores vacuæ, inæquales, florentes longiores, angustæ, acuminatæ, 3-nerves, variant 1½ ad 2 lin. longæ. *Palea* multo brevior, incurva, 2-carinata, post fructum glumamque delapsos diu persistens. *Caryopsis* oblonga, lævis.

Hochstetter, in pointing out the affinity of this plant to *Eragrostis*, distinguishes it chiefly on account of the third glume enclosing only a palea without any perfect flower, and thus showing an approach to *Uniola*; but *Uniola*, besides the difference in the nerves of the glumes, has at least 3 and usually 4 to 6 of the lower glumes quite empty. The continuous rhachilla and persistent palea of our plant are specially characteristic of *Eragrostis*.—G. Bentham.

Fig. 1. Spikelet. 2, 3. Lower empty glumes. 4. Flowering glume. 5. Palea. 6. Pistil and lodicules. 7. Stamen. 8. Caryopsis.

Plate 1372.

MUNROA SQUARROSA, *Torr.*

Gramineæ, Tribe Festuceæ (*Sesleriecæ*).

M. squarrosa, *Torr. Bot. Whipple Exped.* 102 (158).

Hab. North America; Western Texas, New Mexico, Sonora, up to Colorado.

Gramen annuum, humile, multicaule, caulibus primariis 2–4-pollicaribus apice fasciculato-ramosis sæpeque fibrilliferis quasi proliferis rigidulis glabris. *Folia* ad basin fasciculorum conferta, linearia, acutissima, rigidula, rarius pollicem excedentia. *Spiculæ* inter foliorum fasciculos paucæ, subsessiles et fere occultæ, sæpius 3-floræ, floribus hermaphroditis, rhachilla supra glumas inferiores articulata, sub quoque flore plus minus elongata. *Glumæ* 2 inferiores vacuæ, sub articulatione persistentes, lanceolatæ, acutæ, hyalinæ, enerves, muticæ; florentes majores, 3-nerves, mucronato-subaristatæ, ad utrumque latus interdum in dentem brevem productæ, superiores vacuæ 1–2, florentibus similes nisi minores. *Palea* hyalina, complicata, anguste 2-carinata, florem amplectens. *Stamina* 3. *Styli* distincti, elongati, a basi laxe breviterque pilosi. *Caryopsis* anguste oblonga, palea multo brevior, libera.

This genus, dedicated to the distinguished agrostologist the late General Munro, is now represented by two or three species from extra-tropical South America, differing from the northern one in a few points of structure, but evidently congeners and with the same habits.—G. Bentham.

Fig. 1. Cluster of leaves and spikelets. 2. Spikelet. 3. 4. Outer empty glumes. 5. Flowering glume. 6. The same opened out. 7. Palea. 8. Pistil. 9. Caryopsis.

Plate 1373.

FINGERHUTHIA AFRICANA, *Lehm.*

Gramineæ, Tribe Festuceæ (*Sesleriecæ*).

F. africana, *Lehm. Cat. Sem. Hort. Hamb.* 1834. *F. ciliata* and *F. sesleriæformis*, Nees, Fl. Afr. Austr. Gram. 136, 138.

Hab. South Africa, apparently common in the colony from Albany and George districts eastward, and recently found also in Affghanistan by Dr. Aitchison.

Gramen cæspitosum, erectum, rigidulum, caule foliis glabris,

1–2-pedale. *Folia* inferiora conferta brevia, superiora pauca distantia, vagina longa; lamina anguste linearis, plana, acuta v. in acumen subulatum producta, 2 5 poll. longa; ligula brevissima, ciliata. *Spica* terminalis, longe pedunculata, dense cylindracea ei *Phlei* subsimilis, $\frac{3}{4}$–$1\frac{1}{2}$ poll. longa, 4–5 lin. diametro. *Spiculæ* 1- rarius 2-floræ, circa rhachin inarticulatam densissime confertæ, singulæ cum pedicello brevissimo articulatæ, compressæ, rhachilla ultra florem producta stipitiformi v. glumifera, flore unico v. infimo hermaphrodito, superiore dum adsit masculo. Spiculæ infimæ et summæ cujusve spicæ diminutæ, vacuæ v. ad glumas vacuas subulatas reductæ, diu persistentes, perfectæ fructiferæ caducæ. *Glumæ* 2 inferiores vacuæ, complicato-carinatæ breviter aristatæ, parum inæquales, plus minus ciliatæ; tertia florens vacuis similis nisi paullo latior rigidiorque, arista brevi nunc ad mucronem reducta; terminalis minor, vacua v. paleam solam rarius florem masculum fovens. *Palea* gluma paulo brevior, subhyalina, 2-carinata. *Stamina* 3. *Styli* distincti, elongati, stigmatibus filiformibus pilis brevibus villosis. *Caryopsis* oblonga, lævis, gluma paleaque laxe inclusa, a palea libera.

This grass is interesting as the only exception to the great series of Poaceæ in the articulation of the pedicel below the spikelet, whilst the empty glume or male flower above the fertile one removes it from the Panicaceæ. The geographical range is also unusual, for it has never been found in any station intermediate between South Africa and Affghanistan.—G. Bentham.

Fig. 1. Spikelet. 2. Outer empty glume. 3. Flowering glume. 4. The same opened out. 5. Palea. 6. Pistil. 7. Caryopsis.

Plate 1374.

DISSANTHELIUM SUPINUM, *Trin.*

Gramineæ, Tribe Festuceæ (*Eragrostideæ*).

D. supinum, *Trin. in Linnæa*, x. 305, humile, dense cæspitosum. panicula brevi dense spiciformi, spiculis 2-floris. *Phalaridium peruvianum*, Nees in Pl. Meyen. 161 *Dissanthelium sclerochloides*, Fourn. Gram. Mexic., 112.

Hab. Andes of Peru and Bolivia, *Lechler*, *n.* 1832, *Mandon*, *n.* 1845, apparently at considerable elevations; also in Mexico (*Fournier*).

Caules basi vaginis foliorum obtecti, cum foliis dense cæspitosis 1–2-pollicares, rarius cum panicula 3-pollicares, glabri. *Folia* angusto-linearia, acuta, ligula membranacea 1–2 lin. longa. *Pedunculus* vix

e foliis exsertus v. demum folia breviter superans. *Panicula* oblonga, subpollicaris, densa v. basi paullo latior laxiorque. *Spiculæ* 2-floræ, rhachilla glabra sub floribus articulata, ultra flores in stipitem minutum producta, floribus hermaphroditis. *Glumæ* 2 inferiores vacuæ, sub articulatione persistentes, linea paullo longiores, angustæ, carinatæ, 3-nerves, acutæ, exaristatæ, parum inæquales; florentes multo breviores, latiores, obtusiusculæ, obtuse carinatæ, 3-nerves, nervis lateralibus marginalibus v. interdum obscuris. *Palea* gluma paullo brevior, 2-carinata, 2-dentata. *Stamina* 3. *Styli* brevissimi, stigmatibus plumosis. *Caryopsis* oblonga, subtriquetra, libera.

In this genus the proportion of the lower empty glumes to the following ones is that of the European *Schismus*, but the venation of the glumes places it in a different subtribe. I have not seen any Mexican specimens, but Fournier has identified them with Lechler's, and he describes the spikelets as 2-flowered only, which character distinguishes this species from the Californian one. Mandon's specimens, n. 1346, are probably the same *D. supinum* in a younger state.—G. Bentham.

Fig 1. Spikelet. 2. The same opened out, showing the summit of the rhachilla. 3, 4. Lower empty glumes. 5. Flowering glume. 6. Palea. 7. Pistil and lodicules. 8. Caryopsis.

Plate 1375.

DISSANTHELIUM CALIFORNICUM, *Benth.*

Gramineæ, Tribe Festuceæ (*Eragrostideæ*).

D. californicum, *Benth.*, tenue, erectum, panicula longa angusto-laxa, spiculis sæpissime 3-floris.—*Stenochlon californica*, Nutt. in 'Journ. Acad. Philad.' ser. 2, i. 189.

Hab. Islands of the coast of Lower California, Santa Catalina, *Gambel*; Guadelupe Island, *E. Palmer*, *n.* 96.

Caules annui, graciles, erecti, $\frac{1}{2}$–1-pedales. *Folia* angusta plana, longiuscula. *Panicula* 2–3-pollicaris. *Spiculæ* quam in *D. supino* paullo majores et in specimine Gambeliano uti in Palmerianis semper 3-floras vidi, a Nuttalio tamen 2-floræ dicuntur. Cætera omnia *D. supini*.—G. Bentham.

Fig. 1 Spikelet. 2, 3. Lower empty glumes. 4. Flowering glume. 5. The same laid open. 6. Palea. 7. Pistil. 8 Caryopsis.

ICONES PLANTARUM.

Plate 1376.

CRYPTOCHLORIS SPATHACEA, *Benth.*

GRAMINEÆ, Tribe CHLORIDEÆ.

Cryptochloris, *gen. nov.*, Char. gen. *Spiculæ* 2-floræ (rarius 1-floræ?) secus rhachin continuum spicæ subsecundæ sessiles, 2-seriatim confertæ. *Glumæ* 2 inferiores vacuæ, persistentes, angustissime lineares, complicatæ, glabræ, parum inæquales, spiculam subæquantes, acutæ, muticæ; florentes membranaceæ, late ovatæ, 1-nerves, extus longe ciliatæ, apice minute 2-dentatæ, sub apice dorso arista rigida instructæ; superiores plures vacuæ obovatæ v. subglobosæ, gradatim minores glabrioresque, omnes aristatæ. *Palea* gluma florenti paullo minor, 2-dentata, pilosula, mutica. *Stamina* ... *Stylus* ... *Caryopsis* gluma inclusa, obovoidea, libera.—*Gramen* annuum, nanum, spica simplici densa bractea spathiformi semi-inclusa.

C. spathacea, *Benth.*, single species.

HAB. Most probably Patagonia, the only specimen known being in a collection made by Capt. Middleton almost entirely in Patagonia, and deposited in Forsyth's Herbarium, though this particular specimen had no locality assigned to it.

Gramen annuum, vix 2-pollicare, ramosum, caulibus infra inflorescentiam $\frac{1}{2}$–1-pollicaribus, foliis paucis laxe vaginatis, lamina lineari. Bractea spathiformis unica (v. 2?), terminalis, 8–10 lin. longa, latiuscula, membranacea, spicam fere omnino includens. Spica intra bracteam sessilis, setis aristisque glumarum florentium quasi plumosa.

The structure of the spikelets is very nearly that of *Chloris* itself, but they are generally, if not always, two perfect flowers, and the habit is very peculiar.—G. BENTHAM.

Fig. 1. Inflorescence after the fall of the spikelets. 2. Deciduous fertile part of the spikelet. 3, 4. Flowering glumes. 5. Palea. 6. Caryopsis. 7, 8, 9. Upper empty glumes.

PLATE 1377.

CRASPEDORHACHIS AFRICANA, *Benth.*

GRAMINEÆ, Tribe CHLORIDEÆ.

Craspedorhachis, *Benth. gen. nov.*, Char. gen. *Spiculæ* 1-floræ, secus rhachin marginatam spicarum unilateralium subsessiles, rachilla brevissima ultra florem non producta, flore hermaphrodito. *Glumæ* 3, exaristatæ, 2 inferiores vacuæ, persistentes, carinatæ, acutæ, 1-nerves, rigidule membranaceæ, subæquales, infima rachi contigua, secunda per anthesin patens; tertia florens pluries brevior, lata, subtruncata, tenuissime hyalina, ciliata. *Palea* gluma vix brevior, angustior, tenuissime hyalina, apice breviter 2-fida v. 2-dentata. *Stamina* 3. *Styli* sub anthesi breves, distincti, stigmatibus plumosis. *Caryopsis* ...—*Gramen* elatiusculum, foliis paucis angustis. Spicæ plures, simplices, secus pedunculum communem sparsæ, erectiusculæ.

C. africana, *Benth.*, single species.

HAB. Tropical Africa, on the Zambesi, opposite Senna, *J. Kirk*.

Caules tenues, rigiduli, 1½–2-pedales. *Folia* radicalia v. secus caulem pauca, vaginis longiusculis striatis; lamina anguste linearis, superne subulato-teres, 3–4-pollicaris; ligula hyalina pluriseta. *Panicula* supra vaginam summam breviter pedunculata, fere semipedalis, rhachi communi simplici. *Spicæ* secus rhachin 10–15, inter se parum distantes, summæ 2–3 confertæ, omnes a basi floriferæ, 2–3-pollicares, rhachi leviter flexuosa ad latera acute marginata. *Spiculæ* sessiles, arcte appressæ, fere 2 lin. longæ.

The genus is in many respects allied in character as well as in habit to the North American *Schedonnardus* figured above (1360), but is readily distinguished by the very small hyaline flowering glume and palea, almost resembling lodicules.—G. BENTHAM.

Fig. 1. Portion of a spike with 3 spikelets. 2. Outer empty glumes. 3, 4. Flowering glume. 5. Palea. 6. Stamen. 7. Ovary and styles.

Plate 1378.

SCHAFFNERA GRACILIS, *Benth.*

Gramineæ, Tribe Zoysieæ?

Schaffnera, *gen. nov.*, Char. gen. *Spiculæ* 1-floræ, in pedunculis axillaribus 1–3 subsessiles, articulatæ, rhachilla brevissima ultra florem non producta, flore hermaphrodito interdum sterili. *Glumæ* 2, inferior vacua, spiculam æquans, ∞-nervis, 3–5-aristata, aristis lateralibus basi sæpius hyalino-appendiculatis, superior florens membranacea, fere hyalina, brevissima 2-loba, arista inter lobos fere dorsali longiuscula patente. *Palea* gluma paullo brevior, tenuiter hyalina, 2-nervis, apice obtusa v. 2-dentata. *Stamina* 3. *Styli* 2, distincti, elongati, apice breviter plumoso-stigmatosi. *Gramen* humile, annuum. Pedunculi in vaginis foliorum floralium inclusi, inferiores interdum solitarii, superiores in vagina 3-∞, fasciculati.

S. gracilis, *Benth.*, single species.

Hab. Mexico; mountains of San Miguelita, in the valley of San Luis Potosi, *J. G. Schaffner.*

Caules dense fasciculati, basi ramosi, ascendentes v. erecti, tenues, 3–6-pollicares, uti tota planta glabri. *Folia* inferiora ad basin ramorum conferta, secus caules plura dissita fere omnia floralia; vaginæ rigidulæ, striatæ, 2–4 lin. longæ; laminæ angustæ, interdum subulatæ, $\frac{1}{2}$–$\frac{3}{4}$-pollicares; ligulæ lanceolatæ hyalinæ. *Spicularum* fasciculi vix folia excedunt. *Glumæ* ipsæ vix linea longiores; aristæ sæpe 3-lineares, tenues, rigidulæ, scabro-denticulatæ. *Caryopsis* in speciminibus vix ab ovario aucta.

The affinities of this plant are still very doubtful. Although the structure of the spikelets is technically that of *Zoysieæ*, the inflorescence is nearer to that of some *Andropogoneæ*, and the 3- or 5-awned empty glumes remind one of *Pappophoreæ*.—G. Bentham.

Fig. 1. Cluster of 3 peduncles, each bearing 2 or 3 spikelets. 2. Peduncle with 3 spikelets. 3. Peduncle with 2 spikelets. 4. Single spikelet. 5. Empty glume. 6. Flowering glume. 7. Palea. 8. Ovary and styles.

Plate 1379.

CLEISTACHNE SORGHOIDES, *Benth.*

Gramineæ, Tribe Tristegineæ.

Cleistachne, *Benth. gen. nov.*, Char. gen. *Spiculæ* 1-floræ, oblongæ, secus paniculæ ramos capillares inarticulatos dissitæ, in pedicello articulatæ, flore hermaphrodito. *Glumæ* 4, 2 inferiores vacuæ, subæquales, latæ, rigidæ, acutiusculæ, muticæ, plurinerves, circa florem convolutæ, clausæ; tertia subbrevior, vacua, angusta, hyalina v. superne membranacea villosaque; quarta sub flore a basi minima hyalina in aristam longam rigidam tortam producta. *Palea* minima, hyalina truncata ciliata; lodiculæ majusculæ. *Stamina* 3. *Styli* distincti, stigmatibus plumosis. *Caryopsis* oblonga, glumis inferioribus rigide coriaceis arcte inclusa.—*Gramen* elatiusculum, foliis longis planis. Panicula anguste thyrioidea, floribunda, pilosa, ramulis erectis flexuosis.

C. sorghoides, *Benth.*, single species.

Hab. Tropical Africa, Shubanga, on the Zambesi, *J. Kirk*; and perhaps a variety with rather smaller spikelets, East Indian Peninsula, Bababoodun hills, Malabar, *Law*.

Caules fide Kirkii 7-pedales, rigiduli. *Folia* pauca, vaginis longis sparse setiferis; lamina plana, pedalis v. longior, breviter subulato-acuminata; ligula brevis, ovata v. lata, brunnea. *Panicula* supra folium summum breviter pedunculata, 6–10-pollicaris, angusta, densa, ramis ramulisque numerosis 1–2-pollicaribus v. interdum parum longioribus. *Spiculæ* brevissime pedicellatæ, oblongæ, 2-lin. longæ, dorso pilosæ; aristæ ½–1-pollicares.

This plant at first sight resembles some specimens of *Sorghum fulvum*, but the total absence of the second spikelet (whether perfect or rudimentary) to each node or notch removes it from the *Andropogoneæ*, and brings it into connection with *Arundinella*. The spikelets in the East Indian specimens are rather darker coloured and perhaps smaller than in the African ones, but I can find no other difference.—G. Bentham.

Fig. 1. Branch of the panicle. 2, 3. Outer empty glumes. 4. Third empty glume. 5. Flowering glume. 6. Palea. 7. Lodicules. 8. Ovary and styles.

Plate 1380.

CYPHOSTIGMA PULCHELLUM, *Benth.*

Scitamineæ, Tribe Zingibereæ.

Cyphostigma, *Benth. gen. nov.*, Char. gen. *Calyx* supra basin elongatam tubulosus, per anthesin spathaceo-fissus. *Corollæ* tubus tenuis, e calyce breviter exsertus; lobi 3, anguste oblongi, subæquales, revoluto-patentes. *Staminodia* lateralia 0; labellum orbiculato-reniforme, obscure 3-lobum, lobo medio magis prominente sub-2-lobo; anthera in filamento brevi erecta, loculis parallelis v. apice parum divergentibus, connectivo angusto ultra loculos in cristam semiorbiculatam petaloideam margine crenulato-crispam dilatato. *Ovarium* basi saltem 3-loculare; stylus filiformis, stigmate exserto crasso oblongo basi postice gibbo circa foveolam terminalem ciliolato; ovula in quoque loculo plurima, sub-2-seriata. *Fructus* ...—Rhizoma horizontale. Foliorum vaginæ longæ convolutæ caulem simulantes. Scapi florentes aphylli, e rhizomate ad basin foliorum elongati, procumbentes, ramulosi, floribus in ramulis sparsis.

C. pulchellum, *Benth.*, single species. *Amomum pulchellum*, Thwaites, Enum. Pl. Zeyl. 318.

Hab. Ceylon; forests of the Central Province, up to an elevation of 3,000 feet, *Thwaites, C.P.*, n. 2736.

Rhizoma durum, breve, horizontale. *Folia* pauca; vaginæ complicato-convolutæ, striato-venosæ venulis transversis interdum quasi tesselatæ, columnam cauliformem $\frac{1}{2}$-pedalem formantes; petioli supra vaginam 1–3-pollicares, lamina oblonga, $\frac{1}{2}$–2-pedalis, præter costam subtus pilosulam glabra. *Scapi* florentes $\frac{1}{2}$–1-pedales, procumbentes, flexuosi, fere a basi floribundi, ramulis nunc brevissimis nunc 2–3-pollicaribus. *Bracteæ* vaginantes ad basin ramulorum et florum confertæ v. dissitæ nec imbricatæ. *Flores* ad axillas bractearum breviter pedicellati. *Corollæ* tubus ad 9 lin. longus, lobi vix breviores, extus puberulæ, pallidæ, venis 3 fulvis. *Labellum* et antheræ crista inter se fere æqualia, rosea, ad apicem antheræ horizontaliter patentia, 9–10 lin. lata. *Stylus* supra antheram brevissime exsertus.

This plant was placed by Thwaites in *Amomum* on account of the large crest or appendage to the anther, but in the large genus *Amomum*, so constant in its inflorescence, a dense erect spike with imbricate bracts, the appendage to the anther is exceedingly variable, and sometimes disappears entirely; and inflorescence appears generally to afford one of the best generic characters in the order, and here

it appears to be accompanied by a peculiar stigma, and the remarkable shape given to the flower by the broad, equally-spreading labellum and anther-appendage. The inflorescence approaches that of the *Elettaria Cardamomum*. Miss Smith's drawing is made up partly from a series of excellent specimens received from Mr. Thwaites, partly from a coloured drawing taken by him from living specimens.—G. Bentham.

Fig. 1. Anther. 2, 3. Stigma. 4. Ovary. 5. The same, transverse section.

Plate 1381.

ERAGROSTIS WIGHTIANA, *Benth.*

Gramineæ, Tribe Festuceæ.

E. (Myriostachya) **Wightiana**, *Benth.* Erecta, elata, longifolia, panicula angusta, dense thyrsoidea, ramulis numerosissimis quaquaversis confertis, spiculis breviter pedicellatis 4–6-floris, glumis 2 exterioribus vacuis parvis in aristam v. mucronem longum desinentibus, florentibus majoribus breviter mucronato-acuminatis. *Leptochloa Wightiana*, Nees in Steud. *Syn. Glum.* i. 209.

Hab. East India, East Bengal, *Griffith;* Sunderbunds, *Wall. Cat. Herb. Ind. n.* 3823.

Caulis validus, pluripedalis, uti tota planta glaber. *Folia* longissima, erecta, rigidula, e basi latiuscula longe subulato-acuminata. *Panicula* 1–2-pedalis, cylindracea; ramis confertis 1–2-pollicaribus erecto-patentibus simplicibus v. parce ramulosis, rhachi glabra v. minute pubescente. *Pedicelli* breves, filiformes. *Spiculæ* 3–4 lin. longæ. *Glumæ* florentes $1\frac{1}{2}$ lin. longæ, rigidulæ, carinatæ, 3-nerves, brevissime mucronatæ, 2 exteriores vacuæ vix lineam longæ sed sæpius in aristam spiculam subsuperantem desinentes, summæ vacuæ 1–2, parvæ.

This species has so peculiar an inflorescence that it is at first difficult to admit it into the genus; it is, however, in some measure connected with it through the *E. cynosuroides*. It has nothing of the chlorideous inflorescence characteristic of *Leptochloa*. Several specimens are affected with a peculiar gall, forming here and there hard nodes in the panicle.—G. Bentham.

Fig. 1. End of a branch of the panicle. 2, 3. Outer empty glumes. 4. Flowering glume. 5. Palea. 6. Young caryopsis.

PLATE 1382.

PSEUDOCENTRUM MINUS, *Benth.*

ORCHIDEÆ, Tribe NEOTTIEÆ.

P. minus, *Benth. sp. n.*, perianthio laxe pilosulo, mento lineari clauso ovario æquilongo v. vix longiore.

HAB. Jamaica, Portland Gap, at an elevation of 5,400 feet, *D. Morris.*

Fibræ radicales in rhizomate brevi fasciculatæ, carnosulæ. *Caulis* erectus, simplex, cum spica pedalis v. paullo altior. *Folia* 2–3-inferiora subradicalia v. prope basin caulis, supra vaginam brevem longiuscule petiolata, ovato-lanceolata v. oblonga, acutiuscula v. obtusa, 3–5-pollicaria, 1–2 superiora multo minora, subsessilia, basi vaginantia. *Spica* densa, 3–6-pollicaris, floribus quaquaversis ad axillas bractearum lanceolatarum subsessilibus erecto-patentibus, pilis crispulis laxe vestitis. *Ovarium* cylindraceum, basi attenuatum, vix 5 lin. longum. *Sepalum* posticum (inferum) patens, lato-lanceolatum, ovario plus duplo brevius; lateralia in mentum seu tubum cylindraceum ascendens ovario æquilongum connata, ad marginem tubi in limbum patens emarginatum brevissime expansa. *Petala* sepalo postico dimidio breviora angustioraque, patentia. *Labellum* ad basin columnæ sessilis, ad os menti in lobos 2 breves falcatos divisum, intra mentum in laminam longe linearem in fundo menti lobo inflexo clausam productum. *Columna* brevissima; clinandrium membranaceo-2-lobum. *Anthera* inter lobos clinandrii brevissime stipitata, erecta, 2 locularis; pollinia in loculis gemina, pulvereo-granulosa, acuminata. *Stigma* concavum ad apicem truncatum columnæ pone rostellum breviter lineare, glandula terminatum.

The habit and essential character are entirely those of the original *P. macrostachyum*, Lindl., from New Grenada, which, however, has larger, more glabrous flowers with the sepaline mentum twice as long as the ovary and some other differences in the details of the flowers. —G. BENTHAM.

Fig. 1. Flower. 2. Labellum. 3. Column and anther-case. 4. Anthers. 5. Pollen masses.

Plate 1383.

PHEROSPHÆRA FITZGERALDI, *F. Muell.*

Coniferæ, Tribe Taxeæ.

P. Fitzgeraldi; monoica, foliis ericoideis decurrenti-adnatis erecto-incurvis crasse subulatis obtusis **v. mucronulatis dorso rotundatis v.** obscure 3-gonis facie leviter conversis, staminum columna ovoidea sessili, connectivo oblongo apice rotundato loculis basilaribus æquilato, amentis ♀ paucifloris erectis, squamis subulato-lanceolatis acutis facie exsculptis, semina ellipsoidea erecta paullo superantibus, testa coriacea obtuse 3-costata.

P. Fitzgeraldi, F. Muell, MS. *Dacrydium Fitzgeraldi*, F. Muell., Fragm. Phytogr. Austral., xi. p. 102.

Hab. New South Wales, in dense woods of the Blue Mountains, near the Katoomba Falls, *R. Fitzgerald*, &c.

Frutex flaccidus, ad 9-pedalis, ramis infimis prostratis radicantibus. *Folia* laxe imbricata, $\frac{1}{12}$—$\frac{1}{10}$ poll. longa, pallide viridia, coriacea, enervia. *Columna staminum* $\frac{1}{6}$ poll. longa; antheræ 12–16, laxe imbricatæ, dorso connexæ, loculis contiguis hiantibus. *Amenti squamæ* 3–6, foliis paullo longiores, suberectæ, lamine ovulifero 0. *Ovulum* facie squamæ basin versus insertum, erectum.

In the total absence of an ovuliferous disk, this plant differs from *Dacrydium*, and agrees with *Pherosphæra*, of which a single Tasmanian species was previously known, thus tending to confirm this genus (which was considered as somewhat dubious in the 'Genera Plantarum') by the addition of a species from a widely distant locality. Baron von Mueller, to whom I am indebted for the specimen of *P. Fitzgeraldi* here figured, suggests ('Fragmenta,' *l.c.*) that *Dacrydium Kirkii* of New Zealand, having 'an often evanescent disk,' may be a congener; but this latter plant is so clearly a *Dacrydium* in habit and in the form of the scales and fruit that it rather tends to suppress *Pherosphæra*, or to establish it on other characters, than to so enlarge it as to include *D. Kirkii*.—J. D. Hooker.

Fig. 1. Leaves and staminal column. 2. Anther. 3. Leaves and ♀ cone. Scale and young seed. 5. Vertical section of immature seed. *All enlarged.*

PLATE 1384.

CAMPYLOSIPHON PURPURASCENS, *Benth.*

BURMANNIACEÆ.

Camphylosiphon, *gen. nov.*, Char. gen. *Perianthii* tubus tenuis, incurvus, exalatus; lobi 6, 2-seriati, omnes angusti, parum inæquales. *Antheræ* 3, intra tubum infra lobos inferiores subsessiles, connectivo latiusculo supra loculos non producto, loculi ad latera connectivi prominentes, transversim in valvas 2 superpositas dehiscentes. *Ovarium* inferum, elongatum, 3-loculare, 6-costatum; stylus perianthio inclusus, apice clavatus, in lobos 3 latos subdivisus; ovula in placentis axilibus numerosissima. *Capsula* angusta, incurva, exalata, perianthio marcescente coronata. *Semina* numerosissima, angustato-globosa, testa appressa.—*Herba* tenuis succulenta, aphylla. *Flores* in racemo terminali simplici v. bifido breviter pedicellati.

C. purpurascens, *Benth.*, single species.

HAB. North Brazil and Venezuela, on tree-roots in moist Catingas at Panuré, on the Rio Uaupès and San Carlos on the Rio Negro, *R. Spruce*, n. 2492; forest behind Manaos on the Amazon, *J. W. H. Traill*, and apparently the same species, Polaro river, British Guiana, *E. F. im Thurn*.

Herba annua (v. e rhizomate perenni ?), semipedalis v. paullo altior, pallide purpurascens, caule simplici v. basi duplicato erecto, squamis sparsis concoloribus erectis breviter vaginantibus instructo, superioribus paullo longioribus in bracteas flores subtendentes abeuntibus. *Flores* in racemo pauci, breviter pedicellati, pallide purpurascentes subcærulescentes v. in planta Guianensi albidi. *Perianthium* cum ovario 9–11 lin. longum, tenue, incurvum, limbi lobi lineari-lanceolati, acuti, ad 3 lin. longi, interiores exterioribus paullo angustiores. *Antheræ Burmanniæ*, loculis insigniter prominentibus, valvis dehiscentia omnino discretis. *Styli* apex insigniter incrassatus, lobis latis crenatis. —G. BENTHAM.

Fig. 1. Portion of the perianth-tube and four of the lobes, opened out showing two of the anthers. 2, 3. Anthers open, showing the two valves of each cell. 4. Apex of the style. 5. Ovary, transverse section. *All magnified.*

Plate 1385.

HELIETTA PARVIFOLIA, *Benth.*

Rutaceæ, Tribe Toddalieæ.

H. parvifolia, *Benth.*, foliolis oblongis v. anguste obovatis obtusis, terminali $\frac{1}{2}$–$1\frac{1}{2}$-pollicari, lateralibus multo minoribus, panicula subsessili petiolos foliorum terminalium vix excedente, floribus 4-meris.

Hab. Mexico, State of Nuevo Leon, near Monterey, *Berlandier*, n. 1404 (144) ; *E. Palmer*, n. 142 ; and State of Coahuila, 24 miles N.E. of Monclova, *E. Palmer*, n. 143, 144.

Frutex ramosissimus, glaber. *Folia* opposita, 3-foliolata ; foliola ad apicem petioli 4–8 lin. longi sessilia, terminale nunc anguste oblongum 1–$1\frac{1}{2}$ pollicare basi longiuscule angustatum, nunc obovatum vix semipollicare, lateralia sæpius dimidio minora basi obliqua, omnia integerrima, punctis pellucidis parvis in folio juniore minutis conspersa. *Panicula* v. cyma trichotoma inter folia paris ultimi brevissime pedunculata, parva, pauciflora, rarius petiolos breviter superans. *Pedicelli* brevissimi, minute 2-bracteolati. *Sepala* 4; parva. *Petala* 4, sepalis 2–3-plo longiora, leviter imbricata. *Stamina* 4 circa discum cyathiformem truncatum affixa. *Ovarium* 4-lobum, 4-loculare. *Ovula* in quoque loculo 2, collateralia. *Stylus* tenuiter columnaris, stigmate capitato 3-sulco. *Fructus* e carpellis 4 samaroideis ante maturitatem cohærentibus radiatim patentibus maturitate solvendis indehiscentibus ; samaræ singulæ nucleo oblongo erecto duro 3–5 lin. longo, in alam subsemipollicarem rigidulam late ovatam v. rotundatam a latere producto. *Semen* unicum, oblongum, lateraliter affixum ; embryo in albumine carnoso axilis, rectus, radicula brevi supera.

This plant was originally sent by Asa Gray with loose fruits received as belonging to it, which proved to be those of a *Ptelea*, and induced Helmsley to describe it in the 'Botany of Central America,' i. 170, as *Ptelea parvifolia*, A. Gray. Palmer's specimens, however, both in flower and with the fruit attached, show that the real fruits as well as the flowers correspond in every respect with the detailed character of the genus *Helietta* given by Tulasne in the 'Ann. Sc. Nat.' ser. 3, vii. 280. Tulasne's original species, *S. Plœana* from New Grenada, of which we have probably rather imperfect specimens gathered by Triana, differs chiefly in the thinner leaflets fully twice the size of those of *S. parvifolia*, and the looser panicle with smaller flowers. A third species was gathered by Balansa in Paraguay and distributed under n. 2515, described as a small tree. It is near *S. parvifolia*, but

the leaflets are longer, remarkable for the rigid point terminating them, and with looser panicles, the flowers all 5-merous, but agreeing in all other respects as well as the fruits with those of the *H. parvifolia*. It may be thus characterised: *H. apiculata*, Benth., foliolis elliptico-oblongis aut lanceolatis (1½–2-pollicaribus) mucrone rigidulo apiculatis, panicula laxa floribunda folia subæquante, floribus fructibusque 5-meris. Asa Gray has thought that the whole genus might be united with *Choisya*, but, besides the stamens equal in number to and not double those of the parts of the flower, the small flowers in a divaricately trichotomous panicle give it a very different aspect, and the ripe fruit of *Choisya* is as yet unknown.—G. Bentham.

Fig. 1. Flower. 2. Stamens, disk, and pistil. 3. Stamens. 4. Ripe carpel, longitudinal section, with the base of the wing. 5. Embryo. 6. Flower bud.

Plate 1386.

NIEBUHRIA WOODII, *Oliv.*

Capparidaceæ.

N. Woodii, *Oliv. sp. nov.*, glabra, foliis 3–5-foliolatis, foliolis elliptico-lanceolatis lanceolatisve acutatis mucronulatis coriaceis venulis subtus prominentibus, floribus in ramis annotinis fasciculatis, pedicellatis, ovario ellipsoideo v. obovoideo glabro longitudinaliter 4-costato, fructu subgloboso.

Hab. **Inanda, Natal, *J. M. Wood*, n. 930.**

Frutex 5–8 pedalis, ramis virgatis teretibus cortice lævi. *Folia* alterna petiolata; petiolis subteretibus 2–4 poll. longis; foliolis 4–7 poll. longis 1½–2½ poll. latis, lateralibus minoribus, basi plus minus angustatis breviter petiolulatis. *Flores* fasciculati v. in racemis sessilibus umbelliformibus dispositi; pedicellis ¼–⅓-poll. longis; bracteis minutis subulatis. *Calyx* campanulatus profunde 4-fidus basi obtusus leviter intrusus, lobis ovato- v. oblongo-ellipticis obtusiusculis breviter apiculatis. *Petala* 0. *Stamina* circ. 13 in toro parum elevato inserta; filamentis gracilibus glabris, antheris basifixis ellipsoideis. *Ovarium* longe stipitatum exsertum, stylo brevissimo deinde incrassato, stigmate hemisphærico bilobulato; ovula 10–12 vel pauciora. *Fructus* subglobosus sublævis, ½ poll. diam.; gynophoro fructifero ½–¾ poll. longo.—D. Oliver.

Fig. 1. Flower laid open. 2. Calyx, *enlarged*. 3, 4. Anthers. 5. Ovary and stigma. Transverse section of ovary. 7. Fruit and gynophore.

Plate 1387.

SIMARUBA MONOPHYLLA, *Oliv.*

Simarubaceæ, Tribe Simarubeæ.

S. monophylla, *Oliv. sp. nov.* Frutex 1–3 pedalis, glaberrimus, foliis simplicibus oblanceolato-oblongis obtusissimis integerrimis coriaceis lævibus brevissime petiolatis, paniculis sæpius pedunculatis terminalibus foliis brevioribus, floribus polygamis.

Hab. Kaieteur Savannah, Potaro river, British Guiana, *G. S. Jenman*, Sept. and Oct. 1881.

Frutex cortice nigrescente sæpe rimoso glaberrimo in ramulis ultimis nitente. *Folia* $1\frac{1}{2}$–3 poll. longa, $\frac{5}{6}$–$1\frac{3}{4}$ poll. lata, coriacea, costa supra leviter depressa, venis inconspicuis; petiolus brevissimus crassiusculus corticatus. *Flores* polygami breviter pedicellati, pedicelli flore æquilongi v. breviores. *Calyx* parvus 4-fidus, lobis deltoideis ovatisve acutis. *Petala* 4 oblongo-elliptica minutissime puberula, æstivatione imbricata $\frac{1}{5}$–$\frac{1}{4}$ poll. longa. *Stamina* 8, appendicula basilari truncata v. lobulata intus pilosula; filamenta glabra subulata; antheræ dorso affixæ late ellipticæ basi profunde bifidæ. *Ovarium* glabrum 4-lobatum, in toro breviter elevato impositum; ovula solitaria pendula; stylus ovario 1–2 plo longior apice 4-dentatus.

I leave this plant in *Simaruba* rather than in *Simaba* on the ground of the imbricate æstivation of the corolla. I find, however, in the unifoliolate *Simaba obovata*, Spruce (Engler, in *Mart. Fl. Bras.* xii. par. 2. p. 210), that the æstivation is also imbricate, and I cannot doubt the two plants are congeneric.—D. Oliver.

Fig. 1. Bud. 2. Expanded flower. 3, 5. Stamens and appendage. 4, 6. Calyx and pistil. 7. Ovule *in situ*.

Plate 1388.

APODOLIRION BUCHANANI, *Baker.*

Amaryllidaceæ, Tribe Amaryllideæ.

A. Buchanani, *Baker in Trimen Journ.*, 1875, 75; foliis hysteranthiis, perianthii tubo limbo æquilongo, limbi segmentis oblanceolatis acutis, antheris 3 ad tubi faucem insertis filamentis brevissimis, 3 ad segmentorum ungues adnatis filamentis longioribus.

Hab. Barren plains of Natal, *Rev. J. Buchanan.*

Bulbus globosus 1 poll. diam., tunicis pallidis membranaceis circiter collum 1–2 poll. longum productis. *Folia* ignota. *Pedunculus* brevissimus. *Spatha* membranacea cylindrica 1 poll. longa apice fissa. *Perianthii* tubus gracilis cylindricus $1\frac{1}{2}$–2-pollicaris: limbi segmenta pallide rubella 18 lin. longa 2–3 lin. lata subtiliter multinervata supra medium ad basin sensim attenuata. *Antheræ* albidæ lanceolatæ 3 lin. longæ, 3 ad tubi faucem subsessiles, 3 supra basin segmentorum insertæ, filamentis filiformibus antheris subæquilongis. *Stylus* filiformis ex tubi fauce breviter exsertus, stigmate capitato, obscure trilobato.—J. G. Baker.

Fig. 1. Flower cut open, shewing segments and upper half of tube, *nat. size.* 2. Anthers. 3. Stigma and upper part of style, *enlarged.*

Plate 1389.

LEONTOCHIR OVALLEI, *Phil.*

Amaryllideæ, Tribe Alstrœmerieæ.

L. Ovallei, *Philippi*, *Descr. Nuev. Pl.* ii. (1873), 69, single species.

Hab. Chili, rather common about El Huasco, Carrizal and other parts of the province of Atacames, where it is known by the name of *Mano de Leon* (Lion's paw), whence the generic name, *Philippi*, *T. King*; also Conception, *Bridges*, n. 1377.

Fibræ radicales fasciculatæ, irregulariter tuberculosæ. *Caulis* erectus, subflexuosus, simplex, sub-2-pedalis, undique foliatus, uti tota planta glaber. *Folia* sparsa, quaquaversa, approximata, patentia v. reflexa, oblongo-lanceolata, acuminata, basi in petiolum brevissimum tortum contracta, majora 3–4-pollicaria, superiora gradatim minora, summa interdum ad squamas breves reducta. *Umbella* terminalis, fere in capitulum condensata, floribus in receptaculo crassiusculo 20–30 breviter pedicellatis v. interioribus sessilibus, bracteis parvis subtensis. *Perianthii* segmenta 6, subæqualia, persistentia, usque ad ovarium discreta sed cum glandula epigyna parum prominente continua, spathulata, $\frac{3}{4}$ poll. longa, in unguem longiusculum erectum contracta, lamina lata erecto-patente. *Stamina* 6, glandulæ epigynæ affixa, segmentis opposita iisque triente breviora, filamentis filiformibus alternis paullo latioribus. *Stylus* subulatus, stigmatibus 3 brevibus patentibus. *Ovarium* inferum, 1-loculare, placentis 3 parie-

talibus. *Ovula* numerosa, 2-seriata. *Capsula* coriacea, triquetro-turbinata, 4–5 lin. longa et lata, apice breviter connata et reliquiis glandulæ epigynæ sub segmentis persistentibus annulata, demum in valvas 3 medio placentiferas dehiscens. *Semina* parva, subglobosa, testa appressa; embryo in albumine duriusculo parvus.

The genus is closely allied to *Bomarea*, but is well distinguished by the dense inflorescence, the shape of the perianth segments (said by Philippi to be fleshy) and especially by the one-celled ovary and capsule.—G. Bentham.

Fig. 1. Flower. 2. Ovary and style. 3. Ovary, transverse section. 4. Capsule. 5. Seed. 6. Vertical section of the seed, showing the embryo.

Plate 1390.

COLA NATALENSIS, *Oliv.*

Sterculiaceæ, Tribe Sterculieæ.

C. Natalensis, *Oliv. sp. nov.*, foliis integris oblongo-oblanceolatis obtuse acuminatis basi angustatis sæpe obtusis longe petiolatis, floribus ♂ axillaribus pedicellatis fasciculatis v. solitariis, calyce 5–(6-) partito v. profunde lobato lobis oblongo-ellipticis extus et intus apicem versus stellato-hirsutis, androphoro glabro calyce breviore, antheris annulatim capitatis locellis parallelis uniseriatis: fl. ♀ carpellis dense hirsutis, stylis apice recurvis stigmate papilloso antice leviter decurrente; carpellis fructiferis obovoideis basi breviter angustatis breviter cinnamomeo-tomentosis.

Hab. **Inanda, Natal,** *J. M. Wood*, n. 321.

Arbor; ramulis teretibus glabris. *Folia* $3\frac{1}{2}$–7 poll. longa $\frac{3}{4}$–2 poll. lata, costa venisque subtus prominulis: petiolus $\frac{1}{2}$–2 poll. longus apice leviter incrassatus. *Flores* $\frac{1}{2}$–$\frac{2}{3}$ poll. diametro. *Carpella* fructifera 4–5, $\frac{3}{4}$–1 poll. longa, $\frac{2}{3}$–$\frac{3}{4}$ poll. lata.

Allied to two or three species, occurring in tropical Africa, but with good specific distinctions. It differs from the common Kola Nut, *C. acuminata*, in the uniseriate parallel anther-cells. It is another of the interesting discoveries made by Mr. Wood in Natal.—D. Oliver.

Fig. 1. Staminate flower. 2. Androphore and anthers. 3. Detached anthers. 4. Pistillate flower. 5. Pistil. 6. Three carpels of fruit.

Plate 1391.

PETERMANNIA CIRROSA, *F. Muell.*

Dioscoreaceis affinis.

P. cirrosa, *F. Muell. in Benth. Fl. Austral.*, vi. 462, single species.

Hab. **Australia, Macleay river, New South Wales, *C. Moore*; Clarence river, *Beckler*.**

Caules scandentes, 15–20-pedales, ramosi, obtusanguli, aculeolis minimis sæpe scabri. *Folia* oblongo-lanceolata v. ovato-lanceolata, 2–4-pollicaria, acuminata, basi cuneata, petiolo brevi interdum torto, rigidule membranacea, scabriuscula, venis primariis plurimis subtus elevatis basi cum costa plus minus confluentibus. *Paniculæ* v. cymulæ laxæ, paucifloræ, breviter pedunculatæ, foliis oppositæ iisque sæpius breviores, inferiores sæpe steriles in cirros tortuosos ramosos mutatos. *Pedicelli* secus ramulos inflorescentiæ solitariæ v. geminæ, recurvæ, 1–3-lineares. *Bracteæ* primariæ parvæ, adnatæ, bracteolæ minimæ. *Flores* hermaphroditi. *Perianthium* supra ovarium fere ad basin 6-partitum, segmentis oblongis petaloideis patentibus reflexis subæqualibus v. interioribus vix angustioribus ad 2 lin. longis. *Stamina* 6, basi perianthii affixa, filamentis erectis brevibus, antheræ oblongæ, erectæ, loculis extrorsum dehiscentibus. *Ovarium* inferum, ovoideum, 1-loculare, placentis 3 parietalibus; stylus tenuiter columnaris, stigmate capitato, ovula in quaque placenta plurima, 2-seriata (anatropa ?). *Fructus* (vix maturus) baccatus, 2 lin. diametro. *Semina* plurima.

The excellent flowering specimens received from Mr. Moore, of Sydney, since the publication of the sixth volume of 'Flora Australiensis,' have enabled me to complete the generic character, but the natural order to which the plant should be referred remains very doubtful. The habit is rather that of *Smilaceæ*, with the inferior ovary of *Dioscoreaceæ*, and the unilocular ovary with parietal placentation is anomalous in both orders.—G. Bentham.

Fig. 1. Flower-bud. 2. Open flower. 3. Stamens. 4. Style. 5. Ovary, transverse section.

Plate 1392.

RAJANIA HASTATA, *Linn.*

Dioscoreaceæ.

R. hastata, *Linn. Spec. Pl.* 1461, foliis hastatis v. triangulari-lanceolatis, floribus masculis subsessilibus, samaris parvulis.—*Plum. Descr. Pl. Amer.*, i. 98.

Hab. West Indies, San Domingo, *Plumier*; Cuba, *Poeppig*, *Wright*, n. 1712, and apparently the same, Bahamas, *L. Brace*.

Glabra, dioica. *Caulis* tenuis, alte volubilis. *Folia* variant, nunc anguste hastata 1–1½-pollicaria, nunc late hastato-deltoidea 3–4-pollicaria, 5–7-nervia. *Racemi* utriusque sexus axillares, tenues, 1–1½-pollicares, simplices v. parce ramosi, solitarii v. 2–3-fasciculati; masculi fere a basi floribundi, floribus subconfertis brevissime pedicellatis v. sessilibus; fæminei longiores floribus distinctius pedicellatis. Fl. ♂ : *Perianthium* late campanulatum, expansum 1½ lin. diametro, ad medium 6-fidum. *Stamina* 6, subæqualia, tubo infra lobos affixa iisque multo breviora. *Pistilli* rudimentum in centro floris pulvinatum. Fl. ♀ : *Perianthium* supra ovarium masculo minus, 6-partitus, persistens. *Staminodia* 0 v. minuta. *Stylus* breviter columnaris, apice in stigmata 3 2-fida patentia divisus. *Samara* cum ala oblique ovata, 5–7 lin. longa, 2–3 lin. lata, uno latere prope basin carpellorum abortivorum rudimentis quasi articulata. *Semen* (*Dioscoreæ*) planum, latum; embryo parvus inter albuminis laminas arcte inclusus, a hilo parum remotus.

Three species of *Rajania* have been well figured by Plumier as to the general outline, but the details of structure have never been since represented. The male flowers are precisely those of the typical forms of *Dioscorea*, and from male specimens alone two or three Brazilian true *Dioscoreas* have been published as *Rajanias*. This genus appears to be strictly limited to the West Indian Islands.—G. Bentham.

Fig. 1. Male flower. 2. The same opened out. 3. Stamens. 4. Female flower. 5. Style. 6. Fruit (samara). 7. Seed. 8. The same, longitudinal section, showing one lamina of the albumen and the embryo.

Plate 1393.

SOYAUXIA GABONENSIS, *Oliv.*

Passifloraceæ.

Soyauxia, *Oliv. gen. nov. Flores* hermaphroditi, spicati. *Calyx* tubo brevissimo ovarium arcte cingente, limbo 5-partito patente, lobis rotundatis obtusis concavis. *Petala* 5 perigyna obovata calyce paullo longiora. *Stamina* numerosissima libera perigyna calycis fauce inserta; filamenta filiformia; antheræ rotundato-quadratæ 4-locellatæ. *Corona* disciformis brevissima tubo calycis inserta faucem ejusdem leviter superans truncata subintegra. *Ovarium* liberum hirsutum truncatum 1-loculare; ovula 6 (3×2) pendula. *Styli* 3, a basi liberi filiformes divergentes; stigmata minuta. *Fructus* 0.—*Arbor* 15–17 ped. *Folia* alterna oblongo-elliptica acuminata breviter petiolata, stipulata. *Spicæ* axillares sæpius geminatæ folio breviores 8–15-floræ, ferrugineo-hirtæ.

S. gabonensis, *Oliv., sp. unica.*

Hab. Gaboon, *H. Soyaux,* n. 48, 1879.

Rami subteretes ferrugineo-hirtelli v. pilosuli. *Folia* $3\frac{1}{2}$–$5\frac{1}{2}$ poll. longa, $1\frac{1}{2}$–2 poll. lata, integerrima membranacea supra glabrescens subtus pilosula v. pubescens costa venulisque secundariis conspicuis: petiolus $\frac{1}{8}$–$\frac{1}{6}$ poll. longus: stipulæ caducæ. *Spicæ* floriferæ $2\frac{1}{2}$–3 poll. longæ pilosulæ. *Flores* subsessiles; bracteæ caducæ; calyx extus appresse sericeo-hirsutis; petala dense sericea.

Fruit I have not seen. This interesting novelty belongs to a group of erect *Passifloreæ* almost confined to West Tropical Africa, and I suppose may be regarded as connecting these with *Samydaceæ* through *Dissomeria.*

Mons. Soyaux, now settled in the Gaboon, well deserves that his name should be associated with one of his interesting discoveries in that region. If he can supply fruiting specimens to his Berlin correspondents, who most liberally allow us to share his collections, it would enable us to complete the description of *Soyauxia.*—D. Oliver.

Fig. 1. Flower, from above, after removal of petals and stamens. 2. Calyx-tube. 3. Petal, back of. 4. Anther, back and front. 5. Transverse section of ovary, showing 5 of the ovules suspended in its cavity. 6. Longitudinal section of ovary; 2 styles remaining.

Plate 1394.

EPALLAGE DENTATA, *DC.*

Compositæ, Tribe Helianthoideæ, Sub-tribe Verbesineæ.

E. dentata, *DC. Prod.* vi. 4, herbacea, caule erecto ramoso pubescente, foliis alternis petiolatis ovato-deltoideis lanceolatisve inæqualiter et sæpe grosse dentatis acutiusculis, basi late cuneatis truncatisve, involucri squamis ovali-oblongis hirtis acutis interioribus paullo longioribus.

Hab. Madagascar, central region. Received recently from *Rev. R. Baron* and *Dr. G. W. Parker*.

Herba annua sæpius ramosa 1–2 pedalis, interdum depauperata caule subsimplice $\frac{1}{3}$–$\frac{1}{2}$ ped. *Folia* sparse villosula, lamina $\frac{3}{4}$–1 poll. longa; petiolus $\frac{1}{4}$–$\frac{3}{4}$ poll. longus. *Capitula* hemisphærica $\frac{1}{4}$–$\frac{1}{2}$ poll. diam. pedunculata cymosa laxe paniculata; involucrum hirtum, squamis pauci-seriatis; receptaculum paleis oblongis oblanceolatisve acuminatis utrinque dentatis v. incisis. *Corollæ* ligulatæ flavæ lamina obovata v. elliptica, interdum parva inconspicua, disci tubus parce glandulosus basi breviter ampliatus. *Antheræ* basi bidentatæ. *Achænia* basi angustata, costis primariis 5, appresse setulosa; pappus aristis paucis cum squamellis intermediis incisis.—D. Oliver.

Fig. 1. Ray floret. 2. Scale of receptacle. 3. Disc floret. 4. Anther. 5. Style-branches. 6. Achene.

Plate 1395.

RHIPOGONUM SCANDENS, *Forst.*

Smilaceæ.

R. scandens, *Forst., Poir. Dict.* vi. 212, floribus paniculatis, perianthii segmentis quam stamina multo brevioribus, stylo vix ovario breviore, ovarii loculis (an semper?) 2-ovulatis.—*A. DC. Monogr.* i. 213, *Hook. f. Handb. N. Zeal. Fl.* 281.

Hab. New Zealand; northern and middle islands abundant, *J. D. Hooker* and others; Chatham Island, *F. Mueller*.

Caulis alte scandens, ramosus, lævis v. demum scabriusculus, uti tota planta glaber. *Folia* opposita v. rarissime cujusve paris inter se parum distantia, ovali-oblonga, obtusa acutiuscula v. brevissime acuminata, 2–4-pollicaria, rigidula, 5-nervia v. nervis lateralibus vix conspicuis marginalibus sub-3-nervia, venulis transversis plus minus distinctis reticulata, petiolo 1–3 lin. longo medium versus rumpente. *Squamæ* ad basin ramulorum breves, rotundatæ. *Paniculæ* in axillis foliorum superiorum pedunculatæ v. ramulum basi paucifoliatum axillarum terminantes, parum ramosæ, laxæ, floribus parvis pedicellatis. *Antheræ* cum filamentis brevissimis fere 2 lin. longæ, perianthium minimum fere occultantes. *Ovarii* loculos in speciminibus examinatis semper 2-ovulatos inveni, ovulis collateralibus, ex Brownio tamen aliisque 1-ovulati sunt, verisimiliter ut in *Smilacibus* nonnullis variant. *Baccæ* globosæ, rubræ, nitidæ, in sicco 4–5 lin. diametro 1–2-spermæ. *Embryo* parvus in albumine duro.

Either Professor Oliver or myself have examined the ovaries of several specimens gathered by various collectors, and have never found the ovules solitary in the cells as described by Brown, Hooker, A. De Candolle, and others, and as they certainly are in the other species of the genus.—G. Bentham.

Fig. 1. Flower. 2. Stamens. 3. Perianth and pistil. 4. Ovary, vertical section. 5. The same, transverse section. 6. Seed. 7. The same, vertical section, showing the embryo.

Plate 1396.

RHIPOGONUM ELSEYANUM, *F. Muell.*

Smilaceæ.

R. Elseyanum, *F. Muell. Fragm. Phyt. Austral.* i. 44, floribus in spica simplici subsessilibus dissitis, staminibus perianthio brevioribus, stylo brevissimo, ovario villoso loculis 1-ovulatis.—*Benth. Fl. Austral.* vii. 10; *A. DC. Monogr.* i. 216.

Hab. New South Wales; Archer's Station, *Leichhardt*; New England, *C. Stuart*; Richmond river, *Henderson*.

Caulis validus, alte scandens, uti inflorescentiæ rhachis et foliorum venæ primariæ pube ferruginea plus minus conspersus v. obtectus. *Folia* opposita, ovato- v. elliptico-oblonga, brevissime acuminata, rigidula, 3–5-tupli-nervia, venulis transversis reticulata, petiolo brevissimo sub lamina rumpente. *Spicæ* axillares, 3–5-pollicares. *Flores*

sigillatim v. per 2–3 dissiti, subsessiles. *Perianthii* segmenta anguste oblonga, patentia, ad 3 lin. longa. *Stamina* triente v. fere dimidio breviora, filamentis brevissimis. *Ovarium* laxe villosum, stigmatibus 3 subsessilibus recurvis; ovula in quoque loculo semper solitaria videntur, lateraliter medifixa. *Fructus* adhuc ignotus.

In all the species of *Rhipogonum* I find the ovules laterally attached about the middle and amphitropous, not pendulous and orthotropous as in *Smilax*, and as given in the general character of the order. The etymology of the generic name was given by Forster himself (*Char. Gen.* 50), not first indicated by Hooker, as supposed by A. De Candolle.—G. Bentham.

Fig. 1. Flower. 2. Stamens. 3. Pistil. 4. Ovary, transverse section. 5. The same, vertical section.

Plates 1397, 1398.

DIOSCOREA BUCHANANI, *Benth.*

Dioscoreaceæ.

D. Buchanani, *Benth. sp. nov.*, foliis alternis late ovato-triangularibus late subcordatis integris v. utrinque basi lobo brevi rotundato auctis 7-nervibus, racemis axillaribus simplicibus, masculis brevibus densis, perianthio subherbaceo lobis acutis, staminibus 6, fœmineis elongatis dissitifloris, capsulis (cum alis) obovatis, seminibus orbiculatis ala undique circumdatis.

Hab. Tropical Africa, Shiré Highlands, Zambesia, *Buchanan*.

Dioica, alte volubilis, glabra. *Folia* membranacea, 2–5 poll. longa, basi 1½–3 poll. lata, apice subacumine brevi rotundata, auriculis basalibus rotundatis, membranacea, venulis inter venas transversis subreticulata, petiolo 1–1½-pollicari basi sæpius torto. Fl. ♂: *Racemi* 1½–2-pollicares, a basi densiflori, pedicellis 1–1½ lin. longis minute bracteolatis. *Perianthium* quam in omni genere majus, campanulatum, fere ad basin 6-fidum, lobis lato-lanceolatis acutis fere 3 lin. longis (ex sicco) tenuiter herbaceis insigniter purpureo-maculatis. *Stamina* 6, prope basin segmentorum affixa iisque paullo breviora; antheræ ovatæ, dorsifixæ. *Pistilli* rudimentum 0. Fl. ♀: *Racemi* sub anthesi 3–4-pollicares, floribus sessilibus dissitis. *Perianthium* supra ovarium 6-partitus, segmentis angustis acutis ad 2 lin. longis. *Staminodia* minuta. *Ovarium* lineare, 3–4 lin. longum, 3-loculare, ovulis in quoque loculo 2 superpositis pendulis. *Stylus* columnaris, stigmatibus 3 brevibus

recurvis apice papillosis. *Capsula* omnino *Dioscorearum* typicarum, 1–1¼ poll. longa, vix 1 poll. lata. *Semen* cum ala late ovale, 6–8 lin. longum, 4–5 lin. latum, albumine 2-lamellato et embryone omnino generis.

The male perianths are at least twice as large as those of any species known to me, the female flowers and fruits are like those of several others.—G. Bentham.

Plate 1397: Male specimen. Fig. 1. Flower. 2. Stamens. Plate 1398: Female specimen. Fig. 1. Flower. 2. The same, longitudinal section. 3. Style. 4. Seed. 5. The same, longitudinal section, showing one lamina of the albumen and the embryo.

Plate 1399.

INULA SHIRENSIS, *Oliv.*

Compositæ, Tribe Inuloideæ.

I. shirensis, *Oliv. sp. nov.*, herbacea erecta, caule fere a basi simplici patentim hirsuto-piloso v. glabrato, foliis inferioribus amplis longe petiolatis ellipticis v. oblongo-ellipticis superne gradatim minoribus sessilibus pilosis, capitulis heterogamis majusculis pedunculatis in cymis 3–5-cephalis terminalibus dispositis, involucris dense flavido-pilosis squamis exterioribus herbaceis ovato-lanceolatis acuminatis, interioribus linearibus acuminatis, achæniis glabris longitudinaliter striatis, pappo uniseriato.

Hab. Shiré Highlands, Zambesia.—*Mr. Buchanan.*

Caulis 3–5-pedalis teres longitudinaliter striatus plus minus fulvo- v. flavido-hirsutus v. pilosus. *Folia* inferiora 1¼–1½ ped. longa ½–⅔ ped. lata obtusiuscula basi in petiolum angustata crenato-sinuata utrinque præcipue in venis paginæ inferioris hirsuto-pilosa, membranacea; folia superiora lanceolata sessilia subamplexicaulia. *Capitula* 1½–2 poll. lata, pedunculata, pedunculis bracteatis dense pilosis, bracteis lanceolatis v. ovato-lanceolatis; involucri squamæ pluriseriatæ interiores angustiores longiores laxe imbricatæ 1–1¼ poll. longæ. *Receptaculum* foveolatum. *Flores* radii flavi breves ligula trifida; disci anguste cylindrici; antheræ basi caudatæ caudis laxe cellulosis. *Achænia* (immatura) anguste oblonga circ. 15-costata glabra; pappus uniseriatus, setis 30–34 simplicibus.—D. Oliver.

Fig. 1. Capitulum, section. 2. Ray floret. 3. Disk floret. 4. Anther. 5. Style branches. 6. Seta of pappus.

Plate 1400.

NOTOBUXUS NATALENSIS, *Oliv.*

Euphorbiaceæ, Tribe Buxeæ.

Notobuxus, *Oliv. gen. novum.* *Flores* monoici, axillares, fasciculati. Fl. ♂: *Perianthium* 4-phyllum, segmentis per paria decussatis lateralibus cymbiformibus æstivatione exterioribus. *Stamina* 6, 4 per paria segmentis anterioribus posterioribusque antepositis, 2 singillatim segmentis lateralibus oppositis; filamenta brevissima; antheræ ovato- v. oblongo-ellipticæ, longitudinaliter dehiscentibus. *Ovarii* rudimentum nullum. Fl. ♀: *Perianthium* 4-phyllum. *Ovarium* ovoideum glabrum triloculare, ovula geminata pendula; styli 3 divergentes intus longitudinaliter stigmatosi. *Fructus* capsularis loculicide 3-valvis, valvis bicornutis. *Semina* nitida nigra.—*Frutex glaberrima. Folia* opposita *tenuiter coriacea elliptica.*

Hab. Inanda, Natal, *Mr. J. M. Wood*, n. 1357; previously collected without expanded flowers by Mr. T. Cooper (1862): Tongaat, n. 3465.

N. natalensis, *Oliv. sp. unica.*

Folia 2–4½ poll. longa, ¾–2 poll. lata, obtusa v. obtusiuscule acuminata, basi in petiolum brevem angustata, integerrima, lævia, glabra. *Inflorescentia* fasciculata axillaris petiolum paullo superans; flores ♂ v. cum flore ♀ centrali; bracteæ lanceolatæ coriaceæ.

This plant is entirely *Buxus* excepting in the two additional stamens, and total absence of any rudiment of a gynœcium in the male flowers, forming thus a transition to the genera *Simmondsia* and *Styloceras*.—D. Oliver.

Fig. 1. Staminate flower, bud. 2. Same, laid open. 3. Anther, back and front. 4. Pistillate flower and bracts. 5. Vertical section of ovary. 6. Seed and dry arilliform integument.

Plate 1360.*

SCHEDONNARDUS TEXANUS, *Steud.*

Gramineæ, Tribe Chlorideæ.

S. texanus, *Steud. Syn. Pl. Glum.* i. 146. *Lepturus paniculatus*, Nutt. Gen. N. Amer. Pl. i. 81.

Hab. North America, from Texas and New Mexico to California and eastward to Illinois, *numerous collectors.*

Gramen tenue, dense cæspitosum, cum panicula $\frac{1}{2}$–$1\frac{1}{2}$-pedali. *Folia* radicalia v. ad basin caulis anguste linearia v. fere subulata, flaccida, vagina longiuscula striata, lamina sæpius 1–2-pollicari, ligula hyalina longiuscula sæpe lacera. *Caulis* infra inflorescentiam 1–4-pollicaris, vaginis paucis lamina brevi terminatis fere obtectus. *Panicula* sæpius caule 2–3-plo longior, ramis paucis simplicibus longe dissitis tenuibus rigidulis 1–3-pollicaribus, primum erectis secundis mox patentissimis unilateralibus. *Spiculæ* 1-floræ, tenues, acuminatæ, 1–$1\frac{1}{2}$ lin. longæ, secus rhachin tenuem alternatim sessiles, secundæ, rhachi arcte appressæ, exaristatæ. *Rhachilla* brevissima, supra glumas inferiores articulata, ultra florem non producta, flore hermaphrodito. *Glumæ* 2 inferiores vacuæ, parum inæquales, infra articulationem persistentes, angustæ, membranaceæ, acuminatæ; florens longior, membranacea, demum rigidula, mucronulata, paleam angustam breviorem floremque amplectens. *Lodiculæ* 0. *Stamina* 3. *Styli* distincti, stigmatibus plumosis. *Caryopsis* linearis, gluma paleaque rigidulis inclusa, libera.

When Nuttall referred this plant to *Lepturus* he was evidently unacquainted with the typical European species, and in the endeavour to include them with his American plant drew up a generic character which will not apply to either. His description of the species is, however, very accurate. Steudel, meeting with Drummond's Texan specimens, proposed them as a new genus without any reference to Nuttall's well-known plant. The genus appears to me to be nearer allied to *Gymnopogon* than to any other.—G. Bentham.

Fig. 1. Portion of the rhachis with the persistent outer glumes of two spikelets. 2. Flowering glume and palea from the upper spikelet. 3, 4. Outer empty glumes. 5. Flowering glume. 6. Palea. 7. Flower. 8. Stamens. 9. Caryopsis.

* Accidentally omitted above (p. 43).

A.M.C. del.

Vincent Brooks Day & Son Imp

Glossocalyx longicuspis, Benth.♂

A.M.C. del.

Vincent Brooks Day & Son Imp.

Glossocalyx brevipes, Benth. ♀

A M C. del

Vincent Brooks Day & Son lmp

Loranthus Mannii. Oliv.

A.M.C. del.

Vincent Brooks Day & Son Imp.

Loranthus curviflorus. Benth.

A.M. C. del

Vincent Brooks Day & Son Imp

Euphorbia zambesiana. Benth.

A.M.C. del

Vincent Brooks Day & Son Imp

Musanga Smithii, R.Br ♂

A.M.C. del.

Vincent Brooks Day & Son Imp.

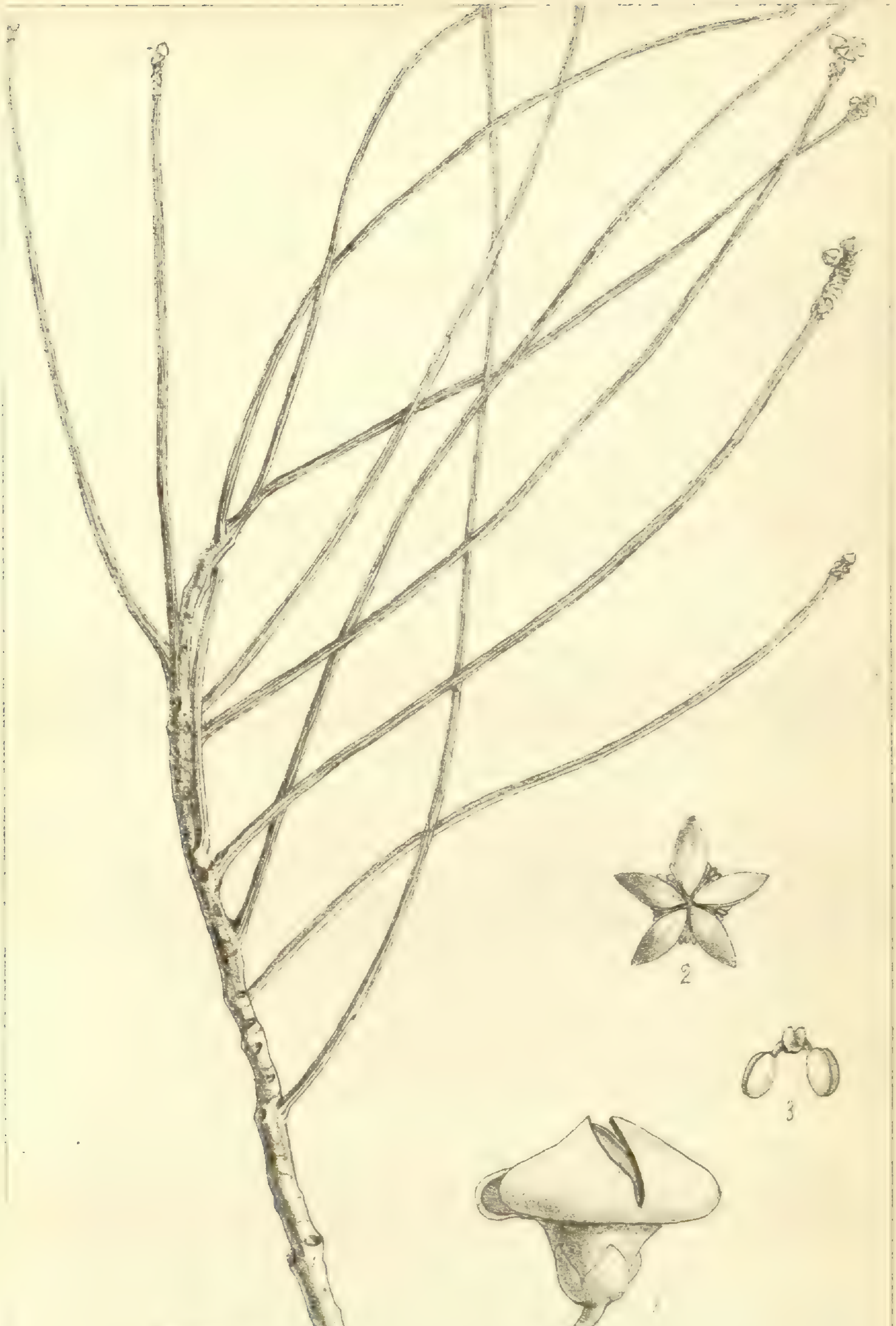
Musanga Smithii, R.Br. ♀.

Loranthus Kirkii Oliv.

A.M.C. del

Vincent Brooks Day & Son Imp

Farsetia Burtonæ. Oliv.



A M C del.

Vincent Brooks Day & Son Imp

Astrostemma spartioides, Benth.

A.M.C. del.

Quercus Jenkinsii, Benth.

A.M.C. del

Quercus Jenkinsii, Benth.

A.M.C. del.

Quercus Maingayi, Benth.

A M C del.

Quercus Beccariana, Benth.

Persea Nanmu, Oliv.

A M ? del.

Modecca aculeata, Oliv.

A M. C. del.

Stellularia nigricans Benth.

A.M.C. del.

Loranthus Atkinsoræ, Benth.

Leptogonum domingense, Berth.

Oxygonum alatum, Burch.

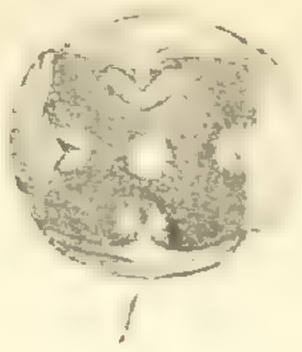
A.M.C. del.

Dimorphochlamys Mannii. Hk. f.

A.M.C. del

Abrophyllum ornans Hk f.

4



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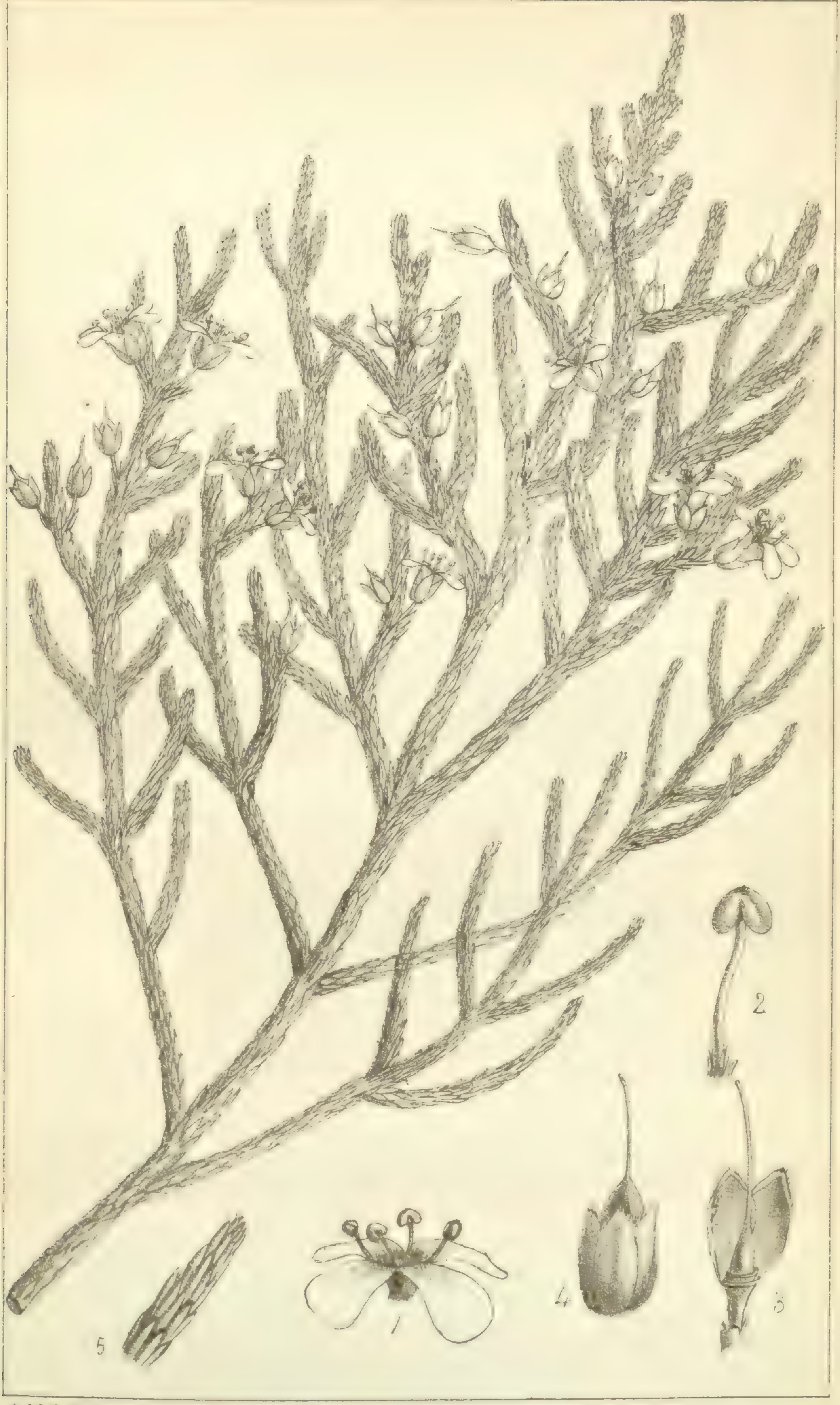
3

2

A.M.C. del.

Phacellaria rigidula, Benth.



A.M.C. del.

Aragoa lycopodioides, Benth.

A.M.C. del.

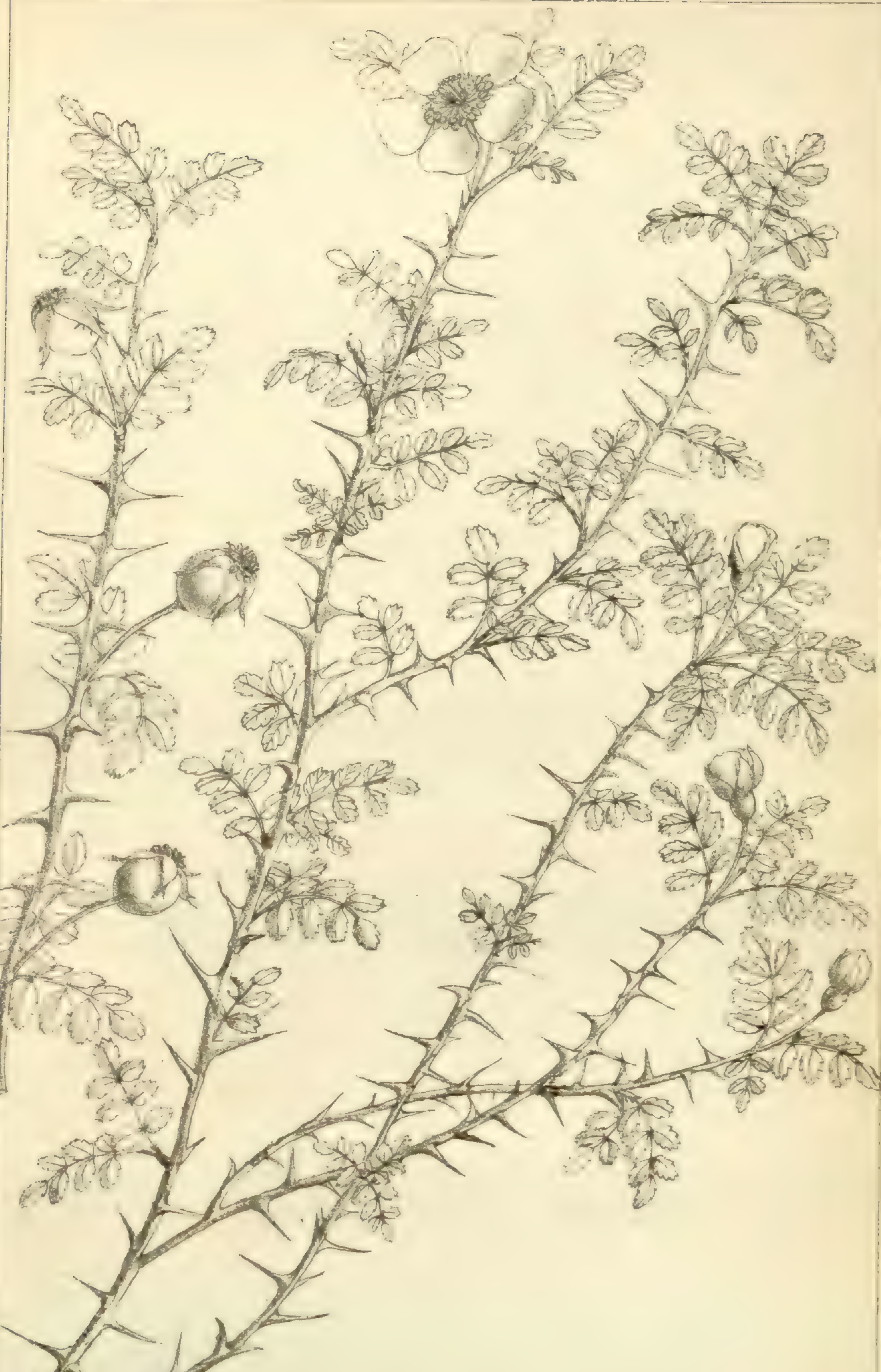
Lanessania turbinata, Baill.

A M C del

Scyphosyce Manniana, Baill.

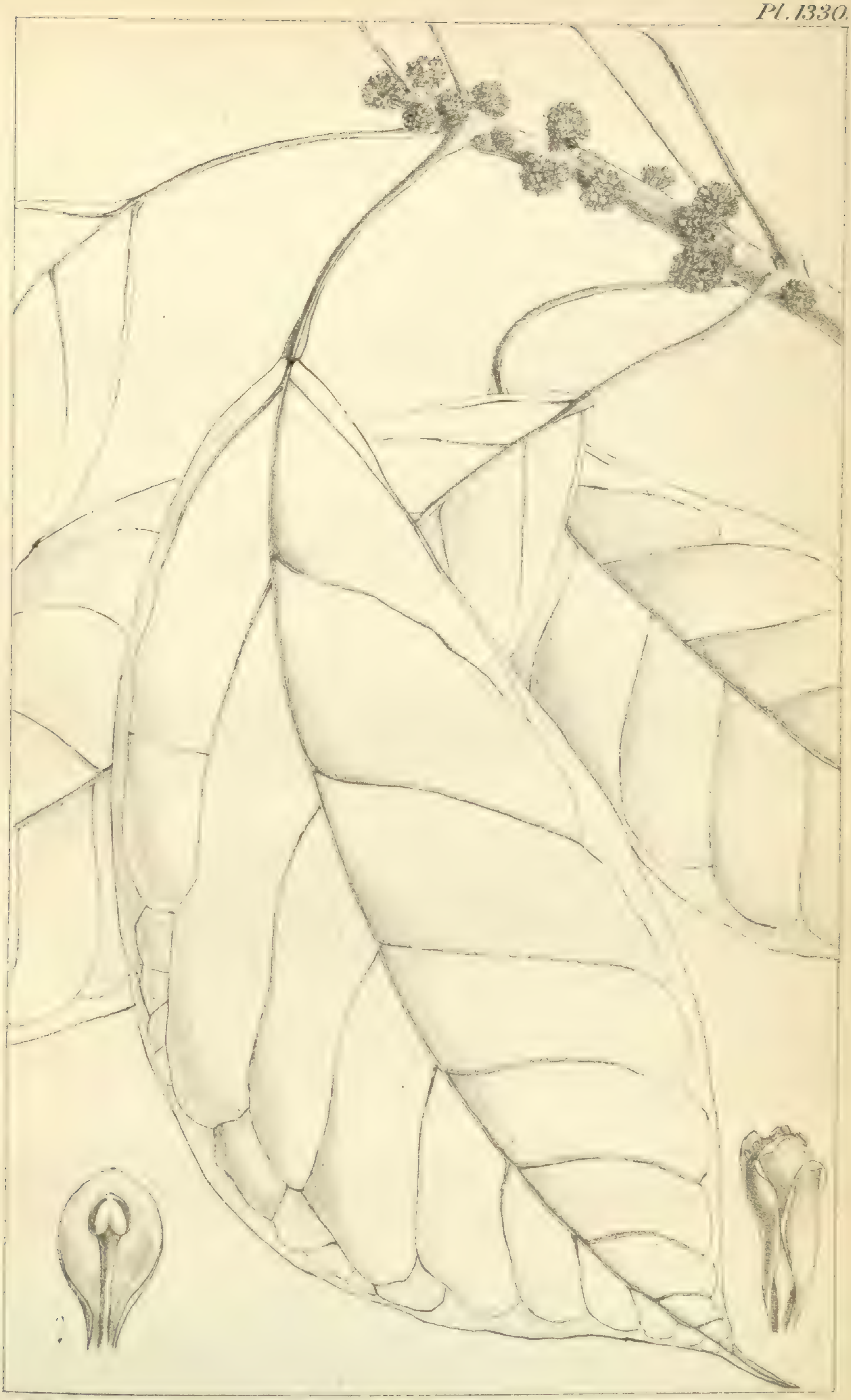
A.M.C. del.

Brunnichia africana, Welw.



A M C del

Rosa Ecaê, Aitch.



A. M. C. del

Perianthus longifolius, Miers ♂

A.M.C. del.

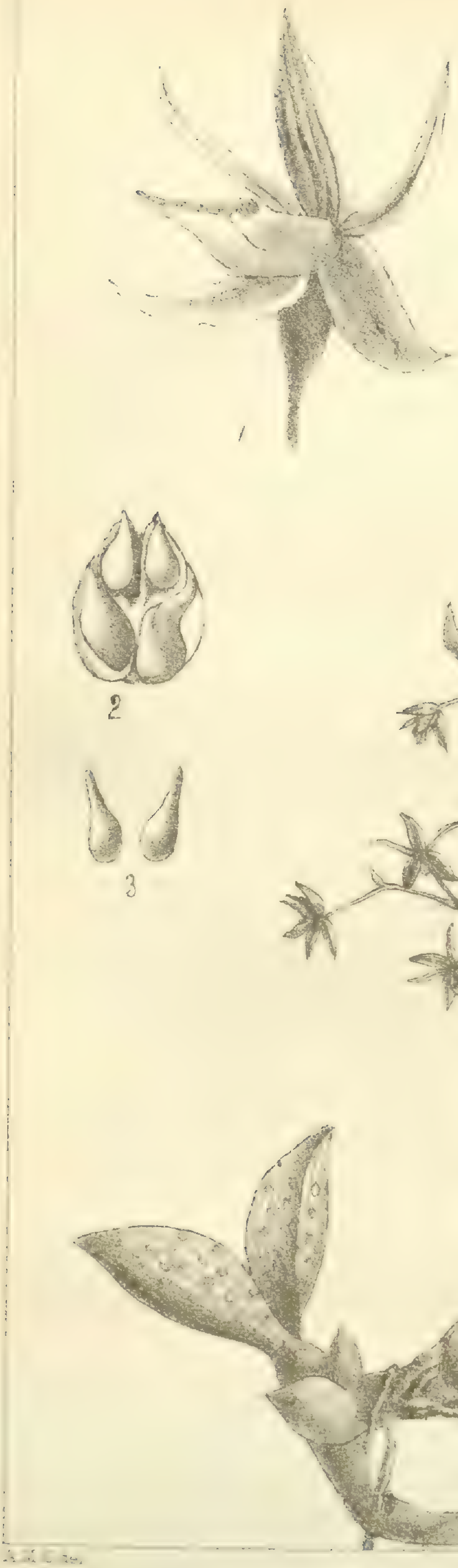
Cephalanthus natalensis, Oliv.

A M C del

Carmichaëlia Kirkii, Hk.f.

Erythrospermum polyandrum, Oliv.

Lanium microphyllum, Lindl.



Lanium Avicula, Lindl.

A.M.C.del.

Thespesia Danis, Oliv.

Micronychia madagascariensis, Oliv.

Gamblea ciliata C.B.Cl.

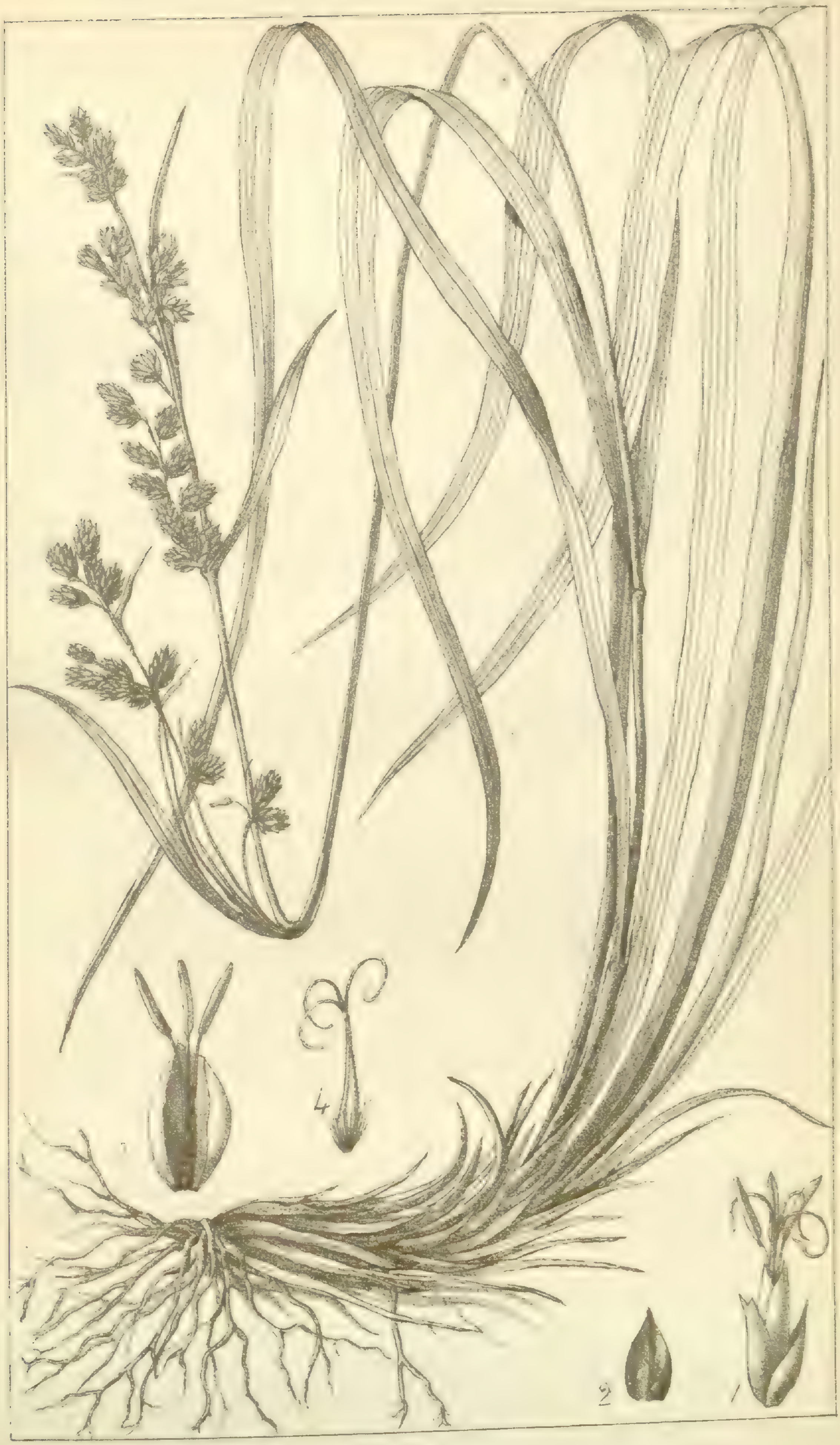
Amphidoxa gnaphalodes, D.C.

A.M. Lith.

Pentzia pinnatifida [illegible]

3

PL. 1312.



A.M.C del

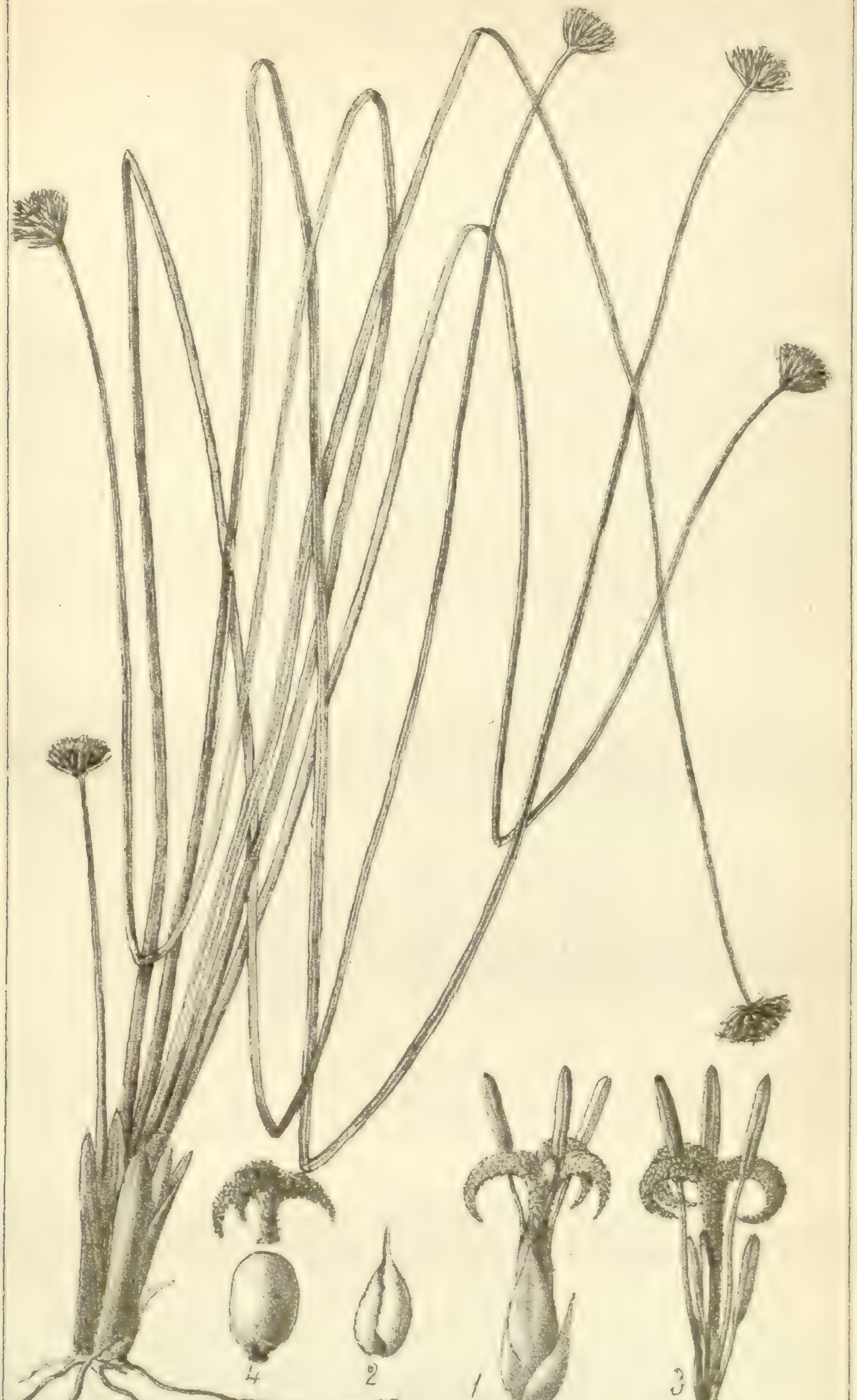
Eriospora pilosa Benth.

A.M.C. del

Cyathochæte clandestina, Benth.

A.M.C del

Rhynchospora ruppioides Benth.



A.M.C. del.

Arthrostylis aphylla R.Br.

Utricularia furcellata Benth.

Pl. 1347.

A M C del

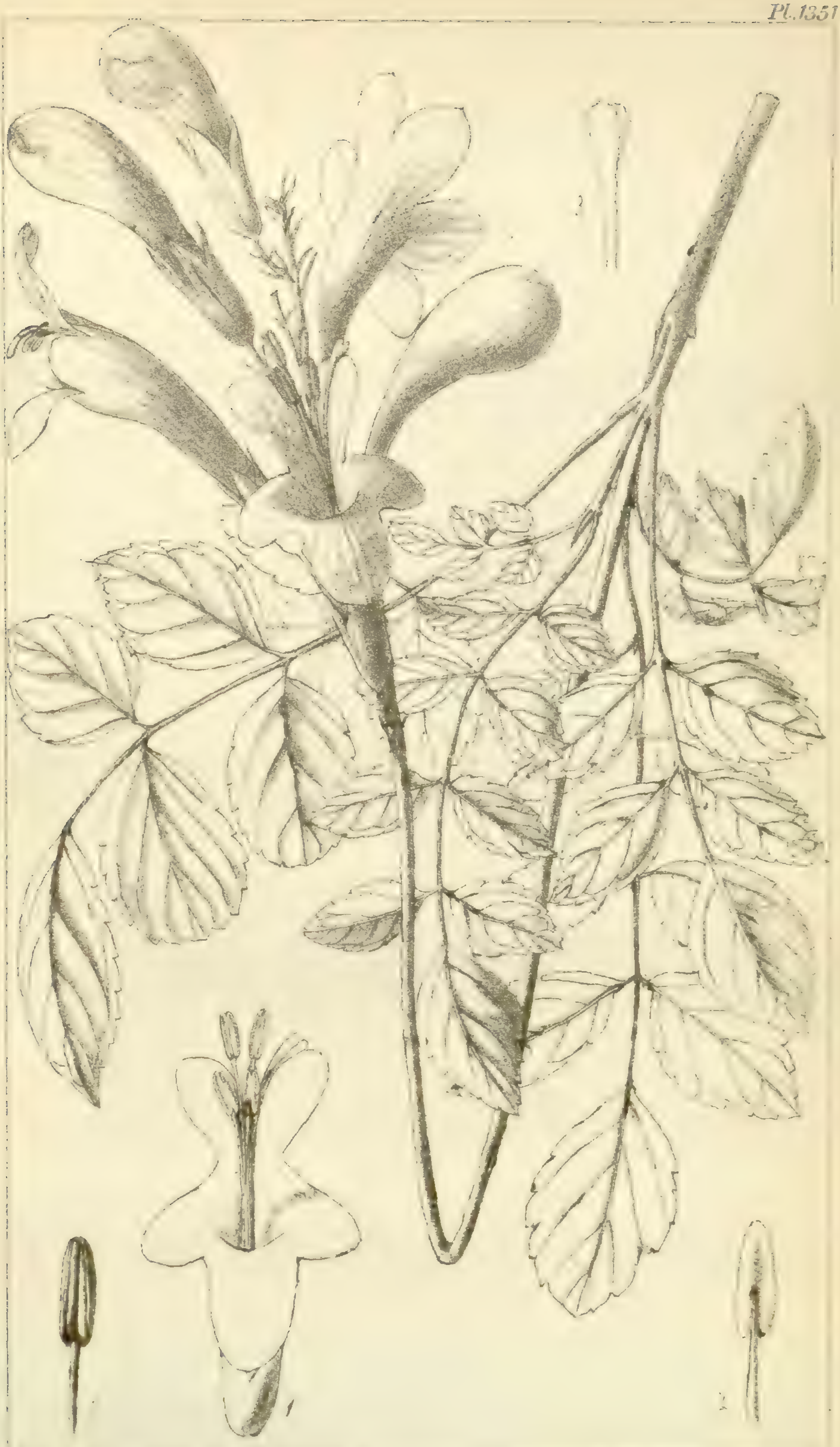
ongifolia, Griseb.

A.M.C. del

Trianoptiles capensis Fenzl

A. Vernonia stenocephala, Oliv.
B. Vernonia Nyassæ Oliv.

Acacia Hunteri, Oliv.



A.M.C.del

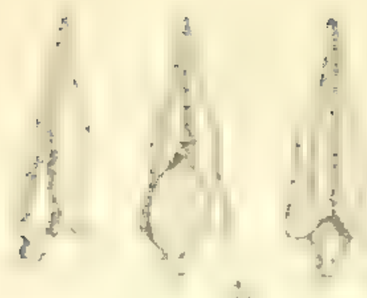
Tecoma Nyassæ, Oliv

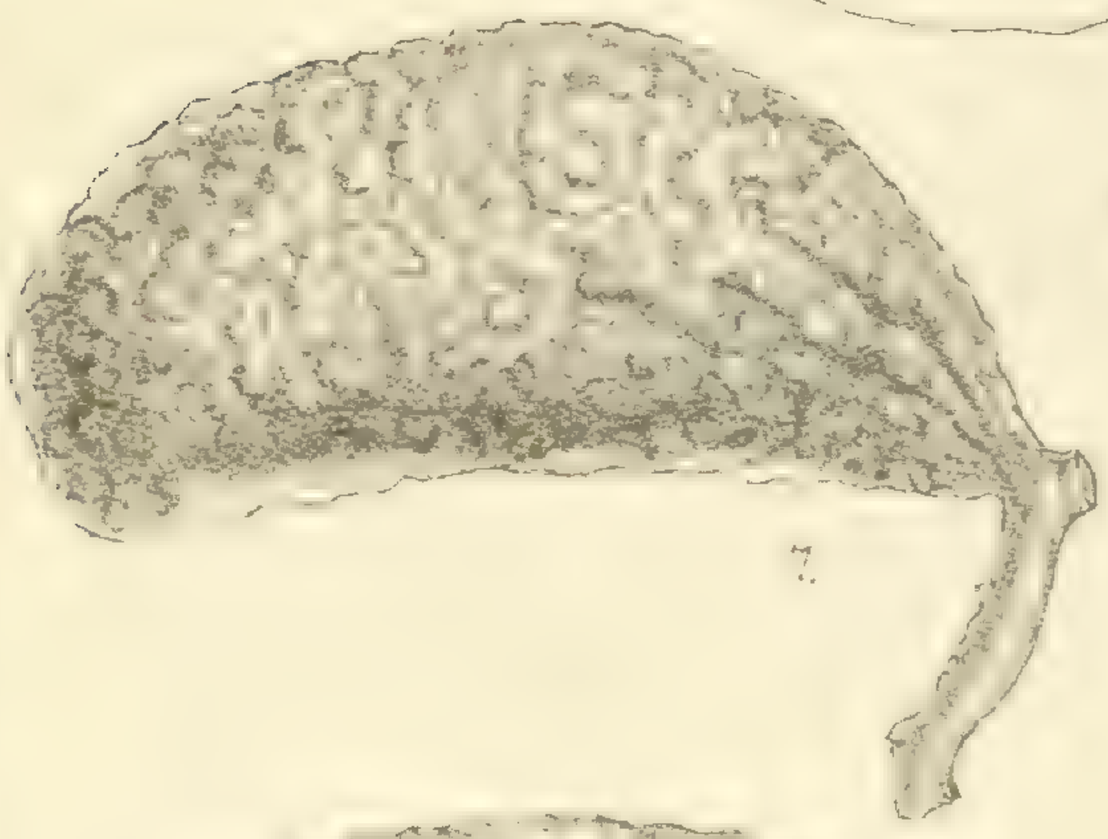
A.M.C del

Begoniella Kalbreyeri, Oliv.

Phyllobotryum spathulatum, Muell, Arg.

Indigofera trachyphylla, Benth.





Diplorhynchus Mossambicensis, Benth.

Randia Buchananii Oliv.

M.S. del

Physotrichia Buchanani, Benth.

Brachystegia longifolia, Benth.

M S del.

Schedonnardus texanus Steud

M.S.del.

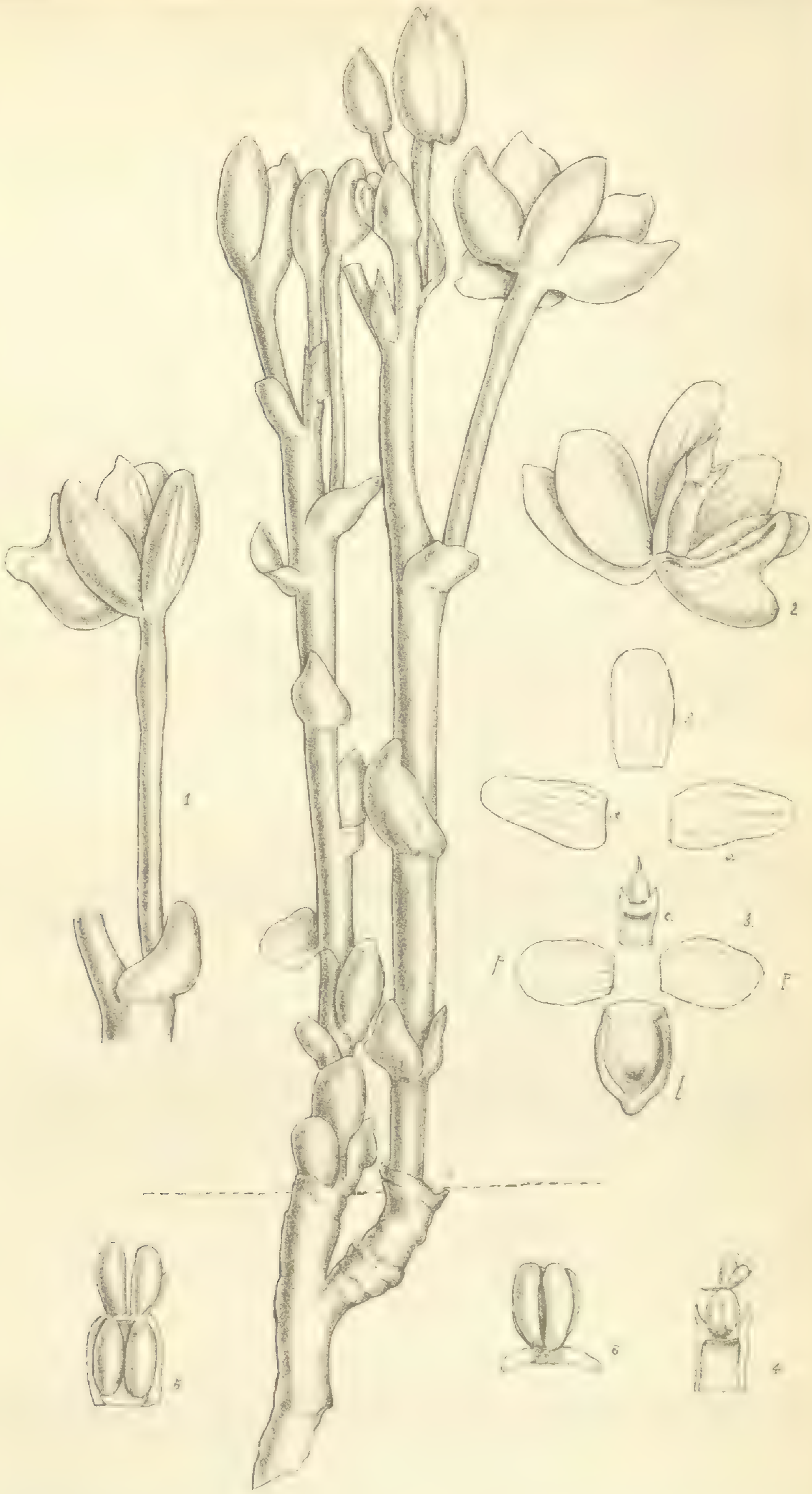
Micraira subulifolia F. Muell.

M.S. del.

Aciachne pulvinata Benth.

M.S. del

A. Anthochloa lepida, Nees.
B. Urochlaena pusilla, Nees.

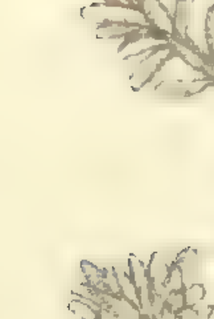


M. S. del

Yoania japonica Max.

M. C. del.

Noronhia Broomeana, Horne.



M.S. del

A. Veronica Cheesemani, Benth.
B. Poranthera alpina Cheesem.

Rhanterium epapposum. Oliv.

M. Pidel.

Eragrostis Coelaehyrum Benth

M.S.del

Nephelochloa orientalis Boiss.

M.S.del

Eragrostis Piercei Benth.

Eragrostis Schimperi Benth.

M.S.del.

Munroa squarrosa Torr

M.S. del

Fingerhuthia african, Lehm

M S del

Dissantheluim supinum, Trin.

M.S. del

Dissanthelium californicum, Benth

M.S. del.

Cryptochloris spathacea, Benth.

M.S. del

Craspedorhachis africana Benth.

M.S del.

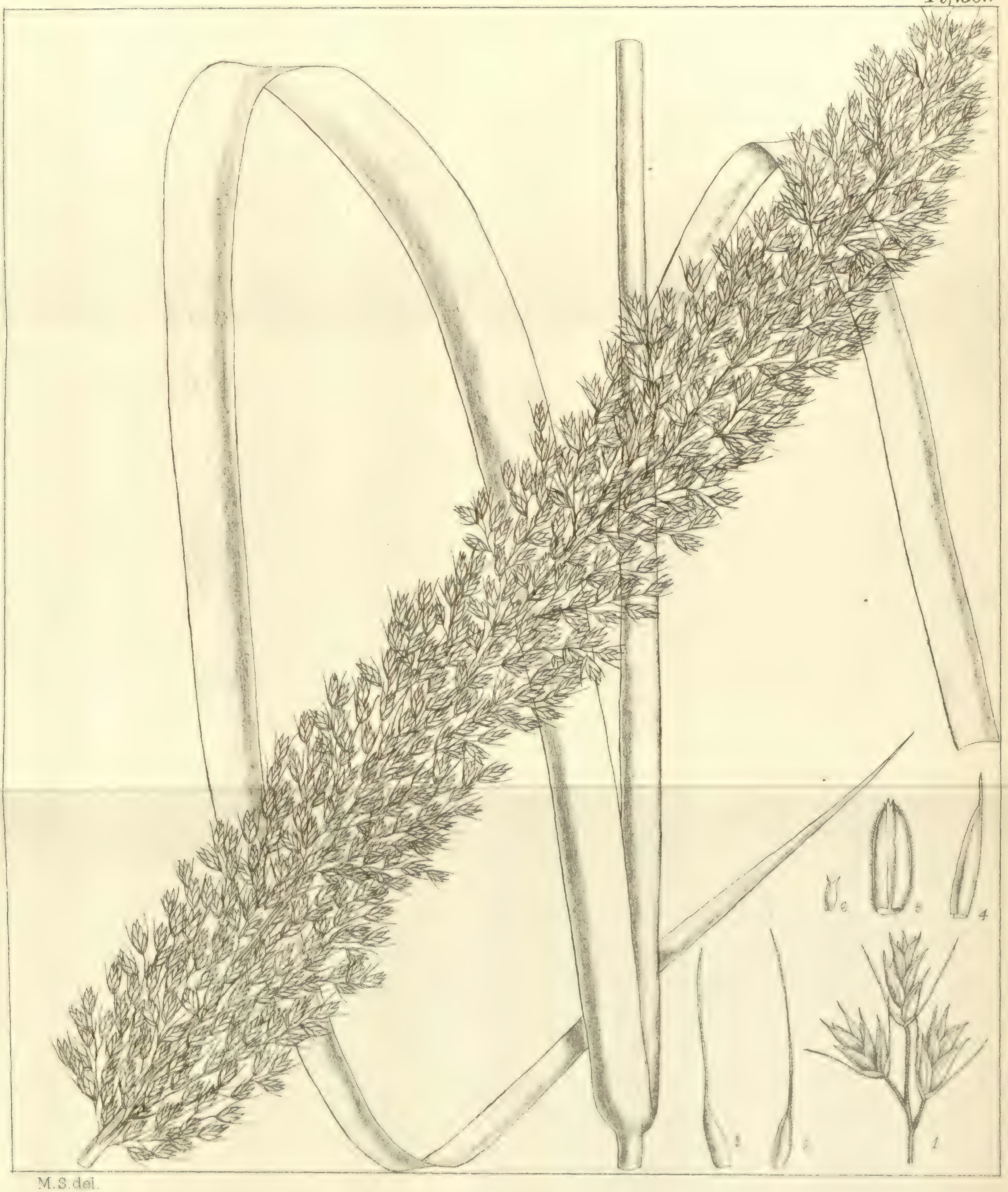
Schaffnera gracilis, Benth.

M.S. del.

Cleistachne sorghoides, Benth.

M & del.

Cyphostigma pulchellum, Benth



Eragrostis Wightiana, Benth.

M.S.del.

Pseudocentrum. minas. Benth

M S. del.

Campylosiphon purpurascens Benth

M.S.del

Helietta parvifolia, Benth,

Niebuhria Woodii, Oliv.

M.S. del.

Simaruba monophylla, Oliv.

Apodolirion Buchanani J.G.B.

M. S. del,

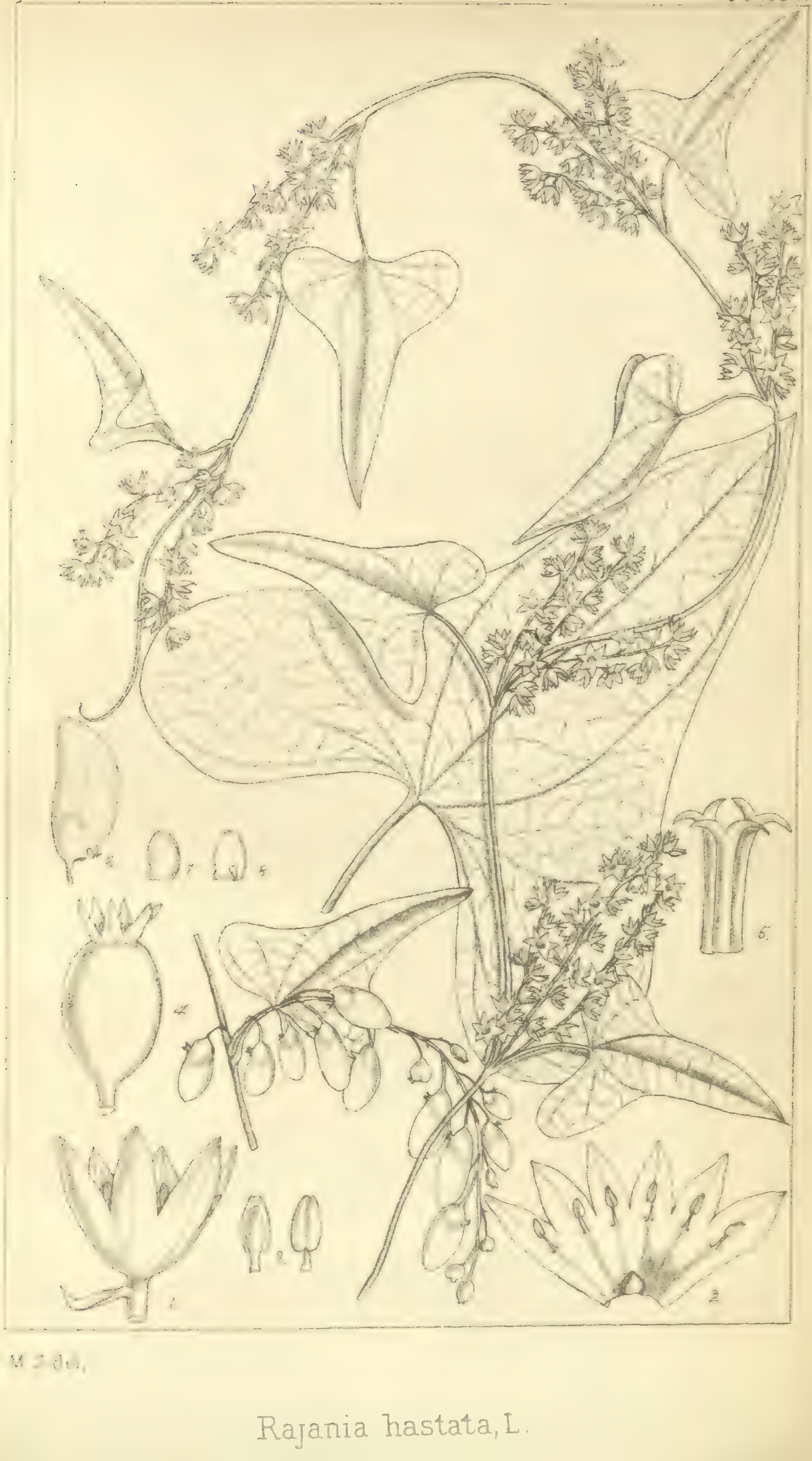
Leontochir Ovallei, Phil.

M. S. del.

Cola natalensis, Oliv.

M.S. del

Petermannia cirrosa, F.M.



Rajania hastata, L.

M.S.del.

Soyauxia gabonensis, Oliv.

M.S.del,

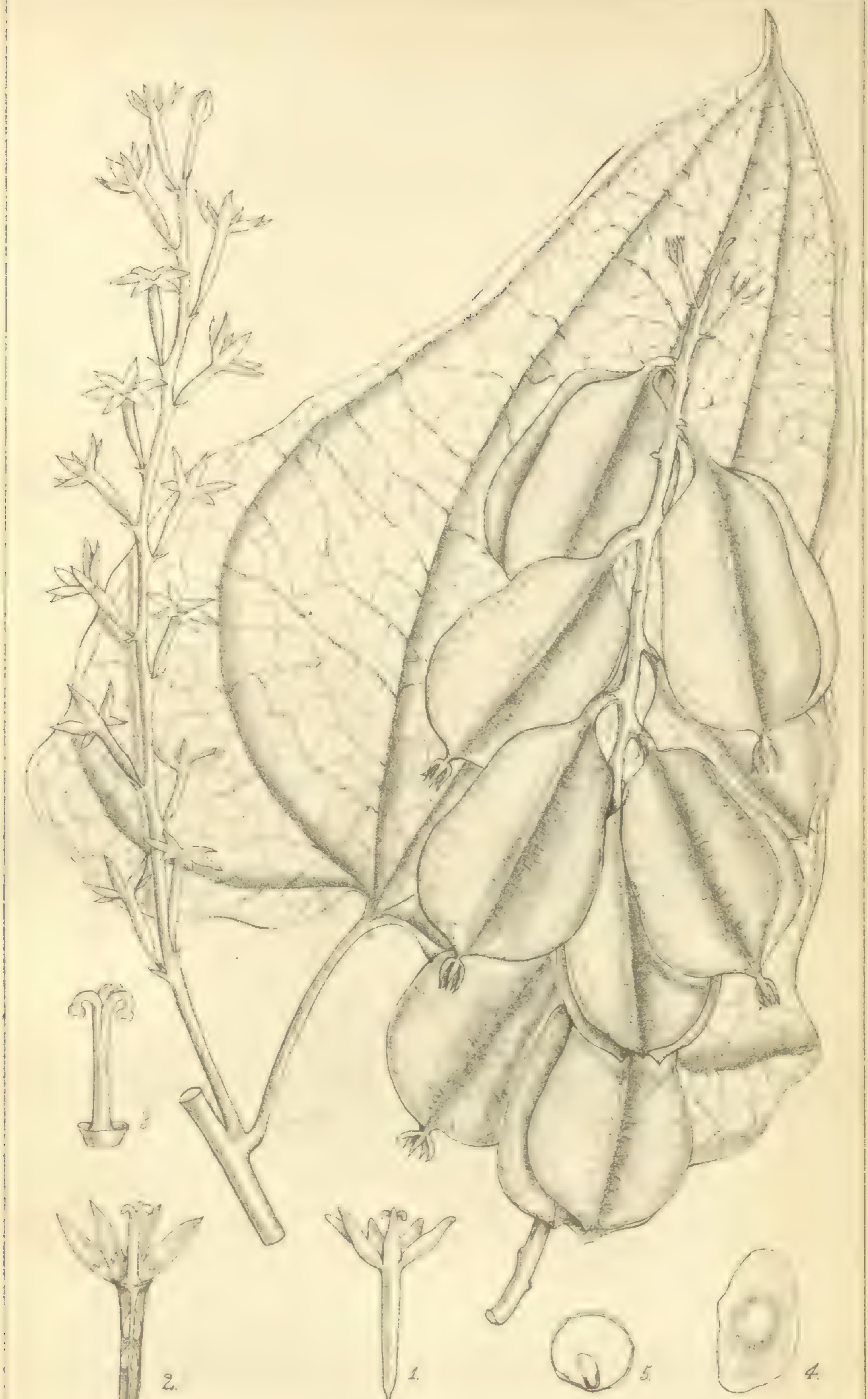
Epallage dentata D.C.

M.S. del

Rhipogonum scandens Forst.

M.S del,

Rhipogonum Elseyanum, F. Muell.



M. S. del.

Dioscorea Buchanani, Benth.

M.S.del.

Inula shirensis Oliv.

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